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ABSTRACT

This document is the users' guide for Version 3.1 of the Public-Use data tapes compiled by the National Assessment of Educational Progress (NAEP), 1983-84. The Public-Use tapes are produced to allow outside researchers access to the NAEP data. The tapes accompanying this guide contain data assessing student achievement in reading and writing at grades 4, 8, and 12, and ages 9, 13, and 17, for more than 100,000 students. The data were collected from student assessment booklets, as well as teacher questionnaires, school/principal questionnaires, and a questionnaire for excluded students. The guide includes descriptions of: (1) background information on NAEP; (2) the 1983-84 reading and writing assessments; (3) the sample design, including the Balanced Incomplete Block (BIB) and Unbalanced Incomplete Block (UBIB) procedures; (4) data collection, scoring, and reporting methods; (5) issues to consider in conducting statistical analyses using this data; and (6) contents and format of the 1983-84 Public-Use data tapes and related data files and printed reports. In this version of the tapes, the maximum likelihood estimates of reading proficiency scores have been replaced with "plausible values" of reading proficiency, and writing proficiency plausible values have been added. (JGL)

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NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS
1983-84 PUBLIC-USE DATA TAPES
VERSION 3.1
USERS' GUIDE

---

by

John L. Barone
Norma A. Norris
Alfred M. Rogers

with contributions by

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June 1986

Prepared for the
Office for Educational Research and Improvement, Center for Statistics
under Grant No. NIE-G-83-0011
by the National Assessment of Educational Progress
Educational Testing Service, Princeton, New Jersey

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NOTICE

Version 3.0 of the 1983-84 Public-Use Data Tapes, issued in June 1985, included a number of reading proficiency scores based upon Item Response Theory. These scores were maximum likelihood estimates for individuals, each optimal for that individual but not necessarily optimal for estimating the distributions of proficiency in the population at large or in subpopulations.

In Version 3.1 of the 1983-84 Public-Use Data Tapes, maximum likelihood estimates of reading proficiency scores have been replaced with "plausible values" (see Chapter IV, Section F). In addition, writing proficiency plausible values have been added to the tapes and are explained in Chapter IV, Section G.

The NAEP 1983-84 Technical Report, cited in this Guide, will be published by Educational Testing Service in September 1986.

ACKNOWLEDGMENTS

The NAEP 1983-84 data are a unique and valuable source of information for the research community. To extend the impact of these data, we have provided the Public-Use Data Tapes and Users' Guide. We hope that these data will be used by many researchers for secondary data analysis.

The 1983-84 Public-Use Data Tapes and Users' Guide were created through the efforts of a talented and dedicated team of data analysts under the direction of John Barone, Director of Data Analysis Systems. Special acknowledgments must be given to Norma Norris for her dedication in assuring the quality of the data and to Al Rogers for developing sophisticated systems for creating the database. Other members of the data analysis staff who made significant contributions of talent and energy in the creation of the data tapes and guide are Laurie Barnett, Jim Ferris, Dave Freund, Dick Harrison, Bruce Kaplan and Bill Van Hassel.

The Users' Guide has been particularly enhanced by the contributions of members of the Psychometric Research Department: Gene Johnson, Bob Mislevy, Kathy Sheehan, Marilyn Wingersky and Rebecca Zwick.

The Users' Guide was prepared under the outstanding editorial supervision of Debbie Kline. Donna Lembeck and Sharon Stewart provided word processing assistance and careful attention in the preparation of the manuscript.

Albert E. Beaton
Director of Data Analysis

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS
1983-84 PUBLIC-USE DATA TAPES
USERS' GUIDE: VERSION 3.1

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USING THE NAEP 1983-84 PUBLIC-USE DATA TAPES

All data contained on the NAEP 1983-84 public-use data tapes have been carefully checked and prepared for general use. The basic data consist of student responses to reading and writing exercises as well as to a large number of questions regarding the students' backgrounds, attitudes, and activities. Basic data also include information about the students' schools and teachers.

It is important to note that the complexity of the NAEP design necessarily affects users of the public-use data tapes. It is important that users understand the design before performing analyses with the tape. For example, 1983-84 NAEP data were collected by both ages and grades; thus, the user must decide whether age or grade samples are appropriate for a particular analysis.

The data tapes contain sampling weights for each student. These weights should be used in statistical analyses. In addition, because of the complex sampling scheme and the proficiency estimation technology used in NAEP, conventional methods of standard error estimation cannot be applied. The NAEP sampling scheme also reduces the effective degrees of freedom for statistical analysis. Each of these points is discussed in further detail in Chapter V, "Issues to Consider in Conducting Statistical Analyses Using 1983-84 NAEP Data."

The responses to reading and writing items are available for analysis, and these data may be used in any way deemed appropriate by the user. These item scores, along with the variables required to compute jackknifed standard errors of proportions-correct, are comparable to the data supplied by ECS on previous NAEP user tapes.

The public-use data tapes also contain "plausible values" (described in Chapter IV, Section F) of reading and writing proficiency for each student for whom calibrated reading or writing items are available. These plausible values are computational byproducts of the analyses performed for the NAEP reports, The Reading Report Card: Trends in Reading over Four National Assessments 1971-1984 (1985) and The Writing Report Card: Writing Achievement in American Schools, 1984 (1986). The plausible values yield consistent estimates of the marginal effects of the traditional NAEP reporting variables. However, analyses involving other effects are subject to biases of varying degrees. Approximations of these biases and procedures for correcting for bias are described in the NAEP Technical Report.

BIBLIOGRAPHIC CITATION

National Assessment of Educational Progress (NAEP) 1983-84 Sample Surveys of Grade 4/Age 9; Grade 8/Age 13; and Grade 11/Age 17 Students' Achievement and Attitudes in Reading and Writing. Conducted by Educational Testing Service for the Office for Educational Research and Improvement, Center for Statistics (formerly the National Institute of Education) and predecessor agencies.

Statement of Responsibility

Prepared by Educational Testing Service for the Office for Educational Research and Improvement, Center for Statistics (formerly the National Institute of Education).

Name of Producer and Distributor

Educational Testing Service: Princeton, New Jersey.

Date of Production and Distribution

June 1986.

Background Information

The United States Office of Education and the National Center for Education Statistics funded the National Assessment of Educational Progress from 1970 to 1979. At that time, responsibility was transferred to the National Institute of Education. Prior to the 1980-81 school year, 9-, 13- and 17-year-olds were surveyed annually in various subject areas, and young adults ages 26-35 were surveyed less frequently; however, since that time, budget restraints have prompted a shift to biennial data collection.

Time Coverage

The data in these files were collected for the NAEP 1983-84 assessment session. Data collection was initiated on October 10, 1983, and concluded on May 11, 1984. Grade 8/Age 13 students were sampled between October 10, 1983 and December 16, 1983; Grade 4/Age 9 students were sampled between January 2, 1984 and March 9, 1984; and Grade 11/Age 17 students were sampled between March 12, 1984 and May 11, 1984.

Geographic Coverage

The United States. Office of Business Economics, Department of Commerce regions and census divisions are provided, but subregional identifiers have been suppressed. NAEP has computed data for four geographical regions in the United States (see Chapter IV).

Abstract

These Public-Use Data Tapes are composed of files containing information collected during the 1983-84 National Assessment of Educational Progress of attitudes and achievement in reading and writing for Grade 4/Age 9; Grade 8/Age 13; and Grade 11/Age 17 students. Each student file provides data for a subset of achievement and attitude items and for a common set of background items. Additional raw data files provide information about teacher and school participants and about students who were excluded from the sample. The tapes also contain SPSS-X and SAS control statement files and a catalog file for each raw data file. In addition to the Users' Guide, printed layouts and codebooks describe each raw data file.

Note: The word "exercise" refers to a single stimulus followed by one or more items, each item requiring a response to the stimulus. Data are recorded at the item level in the User-Tape files.

Tape Specifications

The 1983-84 Public-Use Data Tapes are available with the following standard tape characteristics:

Recording Density:	1600 or 6250 bytes per inch
Recording Format:	EBCDIC or ASCII
Blocking:	Blocked or Unblocked
Label:	IBM Standard, Unlabeled or ANSI

Inquiries and Tape Orders

Inquiries concerning the contents or use of the 1983-84 Public-Use Data Tapes may be forwarded to the individuals below:

Subject-Matter Inquiries

Douglas Rhodes
Associate Director, NAEP
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08541
Tel: 609-734-1464

Computer-Related Inquiries and Tape Orders

Norma Norris
Senior Research Data Analyst
Educational Testing Service
Rosedale Road
Princeton, New Jersey 08541
Tel: 609-734-5898

Tapes may be ordered for all grade/age groups or for individual grade/age groups. Orders will be shipped with machine-readable data files, the Users' Guide, printed layouts and codebooks, microfiche copies of item texts and a printout of the first 50 records for each data file.

I. NAEP: An Overview

I. NAEP: An Overview

A. Introduction

The National Assessment of Educational Progress (NAEP) is a continuing, congressionally mandated national survey of the knowledge, skills, understandings, and attitudes of young Americans in major learning areas usually taught in school. Its primary goals are to detect and report the current status of, as well as changes in, the educational attainments of young Americans, and to report long-term trends in those attainments. The purpose of NAEP is to gather information which will aid educators, legislators and others in improving the educational experience of youth in the United States. It is the first ongoing effort to obtain comprehensive and dependable achievement data on a national basis in a uniform, scientific manner.

B. Overview

Between 1964 and 1969, initial assessment planning and development activities were conducted for NAEP with support from both the Carnegie Corporation and the Ford Foundation. During this time, objectives and exercises were developed for many of the learning areas, sampling and data collection strategies were planned, and data analysis plans were formulated and outlined.

From its inception, NAEP has developed assessments through a consensus process. In the process, educators, scholars, and lay persons design objectives for each learning area, proposing general goals they feel Americans should achieve in the course of their education. After careful reviews, the objectives are given to item writers, who develop measurement instruments appropriate to the objectives.

After the items pass extensive reviews by subject-matter specialists, measurement experts, and lay persons, they are administered to a stratified multi-stage national probability sample. The young people sampled are selected so that assessment results may be generalized to the entire national population (see Chapter III for details on assessment design).

NAEP collected data for the first time in 1969. Since that time, samples have included over one million 9-, 13- and 17-year-old students and, as funding would allow, 17-year-olds who had left school and adults 26 to 35 years of age. As Table I.1 illustrates, assessments have focused on traditional learning areas such as reading, writing, mathematics, and science, and on less traditional areas such as citizenship, art, literature, music, and career and occupational development.

Since 1971, NAEP has been solely supported by federal funds. Funding agencies have included the Office of Education and the National Center for Education Statistics (NCES). NAEP is currently supported by

the Office for Educational Research and Improvement, Center for Statistics (formerly the National Institute of Education).

NAEP was administered by the Education Commission of the States (ECS) through 1982. In 1983, however, Educational Testing Service (ETS) assumed responsibility for administration of the project. In assuming responsibility for NAEP, ETS has incorporated an updated sampling design (see Chapter III) and, at the same time, has made a concerted effort to ensure continuity with previous assessments.

Public-use data tapes were first produced in 1975, allowing outside researchers access to the NAEP database. The 3.0 version of the public-use data tapes, produced in June 1985, was the first to be produced by ETS, and contained data for the 1983-84 assessment session. The current version of the tapes, Version 3.1, also contains 1983-84 assessment data, but replaces maximum likelihood estimates of reading proficiency scores with plausible values, and includes plausible values for writing proficiency (see Chapter IV, Sections F and G for more information about plausible values). Although it will not be possible to change the format of the tapes issued prior to the 1983-84 assessment session (Versions 1.0 through 2.2), the format of the Versions 3.1 and 3.0 tapes has been refined to enhance the ease of use.

Table I.1
National Assessment of Educational Progress
Learning Areas, Grades and Ages Assessed
1969-1984

ASSESSMENT YEAR	LEARNING AREAS	GRADES/AGES ASSESSED*							
		Grade 4	Age 9	Grade 8	Age 13	Grade 11	Age 17IS	Age 17OS	Age ADULT
	Science		X		X		X	X	X
	Writing		X		X		X	X	X
Year 1/1969-70	Citizenship		X		X		X	X	X
	Reading		X		X		X	X	X
Year 2/1970-71	Literature		X		X		X	X	X
	Music		X		X		X	X	X
Year 3/1971-72	Social Studies		X		X		X	X	X
	Science (2)		X		X		X	X	X
Year 4/1972-73	Mathematics		X		X		X	X	X
	Career and Occupational Development		X		X		X	X	X
Year 5/1973-74	Writing (2)		X		X		X	X	
	Reading (2)		X		X		X	X	
Year 6/1974-75	Art		X		X		X	X	
	Citizenship/ Social Studies (2)		X		X		X	X	
Year 7/1975-76	Mathematics**				X		X	X	
	Science (3)		X		X		X		
	Basic Life Skills**						X		
	Health**							X	
	Energy**							X	
	Reading** (3)							X	
Year 8/1976-77	Science** (3)							X	
	Mathematics (2)		X		X		X		
Year 9/1977-78	Consumer Skills**						X		
	Art (2)		X		X		X		
	Music (2)		X		X		X		
Year 10/1978-79	Writing (3)		X		X		X		
	Reading (4)		X		X		X	X	
Year 11/1979-80	Literature (2)		X		X		X	X	
Year 12/1980-81	No Data Collection								
	Mathematics (3)		X		X		X		
	Citizenship/ Social Studies (3)		X		X		X		
Year 13/1981-82	Science** (4)		X		X		X		
Year 14/1982-83	No Data Collection								
	Reading (5)	X	X	X	X	X	X		
Year 15/1983-84	Writing (4)	X	X	X	X	X	X		

* 17IS denotes 17-year-olds enrolled in public or private schools; 17OS denotes 17-year-olds who dropped out of school or graduated prior to the assessment.

** Indicates small, special-interest assessments conducted on limited samples at specific ages

( ) Indicates second and subsequent assessments of a learning area

II. The 1983-84 NAEP

II. The 1983-84 NAEP

A. The Subject Areas

In 1983-84, NAEP conducted an assessment of attitudes and achievement in reading and writing for more than 100,000 students in the age and grade categories outlined in this chapter.

B. The Instruments

The assessment session incorporated four distinct types of instruments: student assessment booklets, a teacher questionnaire, a school/principal questionnaire, and a questionnaire for excluded students.

1. Student Assessment Instruments

Based upon the Balanced Incomplete Block (BIB) and Unbalanced Incomplete Block (UBIB) sampling design outlined in Chapter III, 24 blocks of exercises were used to create a total of 63 BIB/UBIB Spiral booklets and four Paced Tape booklets for each grade/age group of students. Paced Tape booklets were used in group administrations to "pace" students through booklets with audio recordings. The instructions were read by an announcer, while reading passages, items, and response choices were read by the student. The taped administrations were used in previous NAEP assessments and were again used in 1983-84 to explore the effects of the change from audio recordings to pencil and paper instruments.

For the 1983-84 session, each Spiral and Paced Tape booklet included six minutes of background and attitude items common to all students. These items are general questions concerning materials in the home, parental education, etc. Additional background and attitude items, as well as reading and writing items, were spiralled throughout BIB and UBIB booklets (see Chapter III for details concerning BIB and UBIB spiralling). A subset of these items was included in the Paced Tape booklets (see Chapter III).

2. The Teacher Questionnaire

In addition to the collection of data on students, NAEP gathered information on the curricula and teaching methods used by selected English and Language Arts teachers. The data were provided by teachers who completed a nine-page questionnaire, which included questions concerning years of teaching experience, frequency of writing assignments, teaching materials used, and the availability and use of computers.

3. The School Characteristics and Policy Questionnaire

The School Characteristics and Policy Questionnaire was completed by the principal or his/her representative. The five-page questionnaire was used to gather information concerning school administration, staffing patterns, English curriculum, and student services.

4. The Excluded Student Questionnaire

This questionnaire was completed by school personnel for every student who was selected for inclusion in the NAEP sample, but who was unable to respond to items because he or she was non-English speaking, educable mentally retarded or functionally disabled. The four-page questionnaire was used to gather information concerning special education, language, and other student programs.

C. The Sample

In planning for the 1983-84 assessment, NAEP personnel decided that sampling students by grade as well as by age would enhance the utility of the data, since school districts traditionally delineate groups of students by grade rather than age. As a result, the 1983-84 assessment includes three student cohorts: students who were either in the fourth grade or 9 years old; students who were either in the eighth grade or 13 years old; and students who were either in the eleventh grade or 17 years old (see Table III.10 for detailed information on grade and age ranges).

The 1983-84 BIB/UBIB Spiral sample represents two overlapping samples. The first sample represents students of specified ages (who could be in any grade). This sample is comparable to the samples from previous NAEP assessments, and is randomly equivalent to samples of students who were administered the Paced Tape session in the 1983-84 assessment. The second sample represents students of specified grades (who could be of any age).

Data for future assessments will be gathered by both grade and age. The 1983-84 sample is briefly summarized by Table II.1 below (detailed information concerning grade/age sampling is contained in Chapter III).

Table II.1
The 1983-84 NAEP Sample

Grade/Age	Students Who Took BIB/UBIB Spiral Assessment Booklets	Students Who Took Paced Tape Booklets	Excluded Students
Grade 4/ Age 9	26,087	5,492*	1,416
Grade 8/ Age 13	28,405	5,158*	1,448
Grade 11/ Age 17	28,861	6,209*	1,361
TOTALS:	83,353	16,859	4,225

* Paced Tape booklets were administered at age level only.

The total number of students who took either Spiral assessment booklets or Paced Tape booklets was 100,212. (For detailed information concerning the student sample, see Chapter III.)

Note that combined grade/age data from the BIB/UBIB Spiral sample appears as a single file on the Public-Use Data Tape. Any analyses intended for grade-only or age-only data require a separation of the data found on this file.

D. Reporting Subgroups

In keeping with previous assessments, the data for the 1983-84 assessment include the following reporting subgroups: student gender, student race/ethnicity, size and type of community, region, parental education, and grade/age. (The procedures used for classifying data into these subgroups are outlined in full in Chapter IV.)

E. Released and Secure Items

NAEP releases some items for unrestricted public use. However, others are kept secure, as they will be readministered in future assessments to determine whether the performance levels have increased, decreased, or remained the same. In order to preserve the integrity of NAEP, it is essential that these items remain secure. For the 1983-84 assessment, the complete contents of the School Characteristics and Policy, Teacher, and Excluded Student Questionnaires will be released, as will all of the background and attitude items administered to students. However, reading and writing items will be held secure.

F. Procedures for Protecting Confidentiality

There are two distinct confidentiality issues in the NAEP files and documentation. First, and as mentioned above, a number of items are kept secure for each assessment session. It is crucial to the long term utility of NAEP that these items not be published or used in other assessments or research projects. At the same time, the utility of the data for secondary researchers is seriously compromised when item text is unavailable. Thus, microfiche copies of the complete exercises have been included. It is requested that users agree to protect the confidentiality of secure items by completing the appended Nondisclosure Agreement Form and returning it to ETS.

The second confidentiality issue involves subregional identifiers. NAEP has promised not to reveal the identities of respondents, schools, districts, or states. In addition, publication of any of these identifiers might permit identification of individual respondents, and this would violate the Privacy Act. Consequently, all subregional identifiers (school, district, county, state, etc.) have been deleted from data files. Scrambled Primary Sampling Unit (PSU), school, and respondent identification fields are included on the data files to permit unique identification of each record and to permit aggregating data across exercise booklets at the school or PSU level.

III. Sample Design

III. Sample Design

A. NAEP Redesign

1983-84 marks the first NAEP assessment to be administered by Educational Testing Service. In conducting its first assessment, ETS incorporated significant changes in both the sample design and assessment instruments.

In past assessments, students at three age levels were administered a number of different booklets which contained mutually-exclusive sets of cognitive items and a common set of background items. Test sessions were timed for groups of students who were "paced" through booklets by audio recordings.

Age-level sampling made it difficult to link NAEP results to state and local school policies, most of which are based upon grade-level information. In addition, the previous design did not allow analysis of the relationship between items appearing in different booklets.

For the current assessment, ETS retained age-level sampling and augmented it with grade-level sampling. As a result, the 1983-84 assessment includes three student cohorts: students who were either in the fourth grade or 9 years old; students who were either in the eighth grade or 13 years old; and students who were either in the eleventh grade or 17 years old.

The 1983-84 assessment combine Balanced Incomplete Block (BIB) and Unbalanced Incomplete Block (UBIB) designs. The item pool for each student cohort was divided into 21 single-length and three double-length blocks, for a total of 24 blocks of items.

BIB Spiralling is a procedure by which only a small subset of items is given to an individual student, but the subsets are administered in such a way that each pair of items is given to a nationally representative subsample of students. The NAEP BIB design assured that each possible pair of 19 of the single-length blocks occurred in at least one booklet, and, as a result, that inter-block analyses would be possible.

The UBIB design incorporated the two remaining single-length blocks, two single-length blocks used in BIB, and the three double-length blocks. The BIB/UBIB design was used to create 63 booklets per grade/age.

Another design feature of the new NAEP was the collection of bridge samples (Paced Tape booklets) by administering some of the NAEP items with audio recordings and simple matrix sampling as had been done in past assessments. The purpose of these samples was to explore the effect of the change from audio recordings to pencil-and-paper administration and, if possible, to project the results of past assessments onto the new scale (see IRT section in Chapter IV). Using

some of the items in the BIB and UBIB Spiral booklets, four Paced Tape booklets were administered to age-eligible students of each grade/age.

A testing session lasted approximately one hour. The BIB and UBIB Spiral booklets took 48 minutes of actual testing time; Paced Tape booklets took approximately 53 minutes.

A common background section was included in the beginning of every booklet. Students were given six minutes to complete this section. Booklets 1-57 (BIB) contained the common background section and three single-length blocks. Students were given 14 minutes to complete each of these three blocks. Booklets 58-63 (UBIB) contained the common background section, one double-length block, and one single-length block. For these booklets, students were given 28 minutes to complete the double-length block and 14 minutes for the single-length block. All students in a given Paced Tape session were administered the same booklet, which included the six-minute common background section.

B. Constructing Booklets

1. BIB Booklets (1-57)

The first 19 of the single-length item blocks were assigned to booklets in threes. This produced 57 distinct booklets. Each possible pairing of the 19 blocks appeared in one of the booklets, and each block occurred in nine booklets. Block assignments are outlined in the left half of Table III.1.

Block designations were recoded using a permutation mapping of the 19 letters A-T (except I--there is no block I). The booklet numbers were then recoded using a permutation mapping of the integers 1-57. Finally, the block orders were randomly permuted within each booklet. The final design is shown in the right half of Table III.1.

2. UBIB Booklets (58-63)

Six additional booklets were constructed to accommodate the remaining blocks (two of the BIB blocks, J and R, the two remaining short blocks, Y and X, and the three double-length blocks, U, V, and W). The two BIB blocks were added to the UBIB design to provide a link between the two item block types. Block Q was substituted for block Y in the booklets administered to grade 4/age 9 students. The complete UBIB sample design is summarized by Table III.2.

The BIB/UBIB booklets in which each block appeared are listed in Table III.3.

Table III.1

NAEP 1983-84 Booklet Design BIB Spiral Sample
(19 x 3 x 57 Cyclic Youden Rectangle)

Original Design				Permuted Design			
	Item Block				Item Block		
Book	1	2	3	Book	1	2	3
1	A	B	G	1	T	G	L
2	B	C	H	2	A	L	P
3	C	D	J	3	D	A	T
4	D	E	K	4	C	S	E
5	E	F	L	5	C	A	H
6	F	G	M	6	G	F	H
7	G	H	N	7	K	R	N
8	H	J	O	8	R	M	F
9	J	K	P	9	O	N	L
10	K	L	Q	10	F	D	B
11	L	M	R	11	E	M	A
12	M	N	S	12	S	H	B
13	N	O	T	13	M	K	D
14	O	P	A	14	T	N	J
15	P	Q	B	15	M	T	C
16	Q	R	C	16	C	L	Q
17	R	S	D	17	H	E	R
18	S	T	E	18	C	P	F
19	T	A	F	19	L	S	K
20	A	C	L	20	N	B	E
21	B	D	M	21	N	C	D
22	C	E	N	22	Q	K	H
23	D	F	O	23	L	H	D
24	E	G	P	24	A	S	R
25	F	H	Q	25	L	J	R
26	G	J	R	26	T	F	Q
27	H	K	S	27	C	K	J
28	J	L	T	28	O	J	S
29	K	M	A	29	Q	O	D
30	L	N	B	30	B	Q	J
31	M	O	C	31	O	T	H
32	N	P	D	32	B	M	L
33	O	Q	E	33	C	R	O
34	P	R	F	34	G	O	E
35	Q	S	G	35	S	Q	M
36	R	T	H	36	B	A	O
37	S	A	J	37	K	G	A
38	T	B	K	38	O	F	K
39	A	D	H	39	P	S	T
40	B	E	J	40	E	F	L
41	C	F	K	41	H	M	J

Table III.1
(continued)

NAEP 1983-84 Booklet Design BIB Spiral Sample
(19 x 3 x 57 Cyclic Youden Rectangle)

Original Design				Permuted Design			
	Item Block				Item Block		
Book	1	2	3	Book	1	2	3
42	D	G	L	42	J	E	D
43	E	H	M	43	F	J	A
44	F	J	N	44	B	G	C
45	G	K	O	45	P	B	K
46	H	L	P	46	S	F	N
47	J	M	Q	47	P	Q	E
48	K	N	R	48	B	R	T
49	L	O	S	49	P	M	O
50	M	P	T	50	R	P	D
51	N	Q	A	51	G	R	Q
52	O	R	B	52	S	G	D
53	P	S	C	53	H	P	N
54	Q	T	D	54	T	E	K
55	R	A	E	55	M	G	N
56	S	B	F	56	A	N	Q
57	T	C	G	57	G	J	P

Table III.2

NAEP 1983-84 Booklet Design
UBIB Sample

Book	Long Block	Short Block
58	U	J
59*	U	Y
60	V	R
61	V	X
62	W	X
63*	W	Y

* In Grade 4/Age 9, block Q was substituted for block Y in booklets 59 and 63.

Table III.3

NAEP 1983-84 BIB/UBIB Spiral Sample
Block-to-Booklet Correspondence

Block	Booklet Numbers										
A	2	3	5	11	24	36	37	43	56		
B	10	12	20	30	32	36	44	45	48		
C	4	5	15	16	18	21	27	33	44		
D	3	10	13	21	23	29	42	50	52		
E	4	11	17	20	34	40	42	47	54		
F	6	8	10	18	26	38	40	43	46		
G	1	6	34	37	44	51	52	55	57		
H	5	6	12	17	22	23	31	41	53		
J	14	25	27	28	30	41	42	43	57	58	
K	7	13	19	22	27	37	38	45	54		
L	1	2	9	16	19	23	25	32	40		
M	8	11	13	15	32	35	41	49	55		
N	7	9	14	20	21	46	53	55	56		
O	9	28	29	31	33	34	36	38	49		
P	2	18	39	45	47	49	50	53	57		
Q	16	22	26	29	30	35	47	51	56	59*	63*
R	7	8	17	24	25	33	48	50	51	60	
S	4	12	19	24	28	35	39	46	52		
T	1	3	14	15	26	31	39	48	54		
U	58	59									
V	60	61									
W	62	63									
X	61	62									
Y	59**	63**									

* Grade 4/Age 9 only
** Grade 8/Age 13 and Grade 11/Age 17 only

3. Paced Tape Booklets (64-67)

Each of the four Paced Tape booklets has three sections: a section of common background items, a section of background and attitude items, and a section of cognitive items.

C. Spiralling Booklets (BIB/UBIB)

The method for spiralling booklets was designed for two purposes:

1. To achieve a ratio of nine students taking a UBIB booklet to two students taking a BIB booklet in order to meet the targeted sample sizes in each category; and,

2. To distribute the booklets across the sample of students so that the booklets within a category (BIB or UBIB) would be administered in equal numbers and without positional bias.

The first purpose was accomplished by forming a cycle of 168 booklets consisting of two sets of BIB booklets (1-57) and nine sets of UBIB booklets (58-63). The BIB and UBIB booklets were merged as follows:

			1	2	58	3	4	59	5	6	60	7	8	61	9	10	62	11
12	63	13	14	58	15	16	59	17	18	19	60	20	21	61	22	23	62	24
25	63	26	27	58	28	29	59	30	31	60	32	33	61	34	35	62	36	37
38	63	39	40	58	41	42	59	43	44	60	45	46	61	47	48	62	49	50
63	51	52	58	53	54	59	55	56	57	60	1	2	61	3	4	62	5	6
63	7	8	58	9	10	59	11	12	60	13	14	61	15	16	62	17	18	19
63	20	21	58	22	23	59	24	25	60	26	27	61	28	29	62	30	31	63
32	33	58	34	35	59	36	37	38	60	39	40	61	41	42	62	43	44	63
45	46	58	47	48	59	49	50	60	51	52	61	53	54	62	55	56	57	63

A given BIB booklet, say #1, appears two times in this cycle; a given UBIB booklet, say #58, appears nine times. Administering this cycle of booklets evenly across the sample of students establishes the ratio of nine UBIB booklets to two BIB booklets.

In a complete cycle of 168 booklets, each of the six UBIB booklets will have appeared nine times and each of the 57 BIB booklets will have appeared two times. As a result of this spiralling, each of the 24 blocks of items used in BIB and UBIB booklets will appear the same number of times in a complete cycle (except for blocks J and R, which are used in both BIB and UBIB booklets at all three grade/age levels, and block Q, which was used in place of block Y for the Grade 4/Age 9 UBIB booklets).

Each block, except for blocks J, R, and Q, appears exactly 18 times in the 168-booklet cycle. Blocks J and R appear 27 times. Block Q appears 36 times in the Grade 4/Age 9 spiralling cycle. Block Y appears 0 (zero) times in the Grade 4/Age 9 spiralling cycle. See Tables III.4, III.5, and III.6 for the block administration and the actual number of students who were assessed as a result of the BIB and UBIB spiralling design.

Table III.4

NAEP 1983-84
Number of Blocks Administered:
BIB/UBIB Spiral and Paced Tape Sample
Grade 4/Age 9 Students

Block	Total	Weighted N	Standard Error (of Weighted N)	Coefficient of Variation
BIB/UBIB Spiral (Grade 4/Age 9)				
A	2771	427920	5505	1.29
B	2795	426861	4903	1.15
C	2776	428236	4311	1.01
D	2790	423029	5473	1.29
E	2741	418129	4383	1.05
F	2744	420904	6210	1.48
G	2804	427961	6438	1.50
H	2795	425636	5130	1.21
J*	4213	641751	5789	0.90
K	2800	421737	3309	0.78
L	2778	425012	4789	1.13
M	2792	427264	5271	1.23
N	2810	425105	5346	1.26
O	2806	427033	7718	1.81
P	2803	419350	7384	1.76
Q**	5611	851199	7867	0.92
R***	4211	635696	6315	0.99
S	2815	426905	4235	0.99
T	2788	424099	4161	0.98
U	2818	427632	3197	0.75
V	2811	428207	4620	1.08
W	2790	427364	3791	0.89
X	2780	425005	4536	1.07
Total Spiral	26087	3971749	18935	0.48
Paced Tape (Age 9)				
P64	1403	3122045	22296	0.71
P65	1356	3005769	31030	1.03
P66	1389	3087985	16357	0.53
P67	1344	3100713	20866	0.67

* Block J appeared in both BIB and UBIB booklets
** Block Q was substituted for block Y in booklets 59 and 63
*** Block R appeared in both BIB and UBIB booklets

Table III.5

NAEP 1983-84
Number of Blocks Administered:
BIB/UBIB Spiral and Paced Tape Sample
Grade 8/Age 13 Students

Block	Total	Weighted N	Standard Error (of Weighted N)	Coefficient of Variation
BIB/UBIB Spiral (Grade 8/Age 13)				
A	3075	467770	6525	1.40
B	3042	464415	4815	1.04
C	3052	468125	5179	1.11
D	3053	466462	4825	1.03
E	3069	472113	3935	0.83
F	3072	472426	3481	0.74
G	3030	467003	5836	1.25
H	3046	468808	6260	1.34
J*	4525	691829	5444	0.79
K	3089	474683	3686	0.78
L	3075	465801	5362	1.15
M	3057	470741	4481	0.95
N	3076	472133	5979	1.27
O	2974	456279	7782	1.71
P	3075	470466	6721	1.43
Q	2982	457437	5589	1.22
R**	4524	699666	6888	0.98
S	3063	467995	5054	1.08
T	3060	468299	4252	0.91
U	3043	470341	4714	1.00
V	3042	472259	4873	1.03
W	3022	463612	4665	1.01
X	3033	467056	4398	0.94
Y	3029	468345	4007	0.86
Total Spiral	28405	4363428	11280	0.26
Paced Tape (Age 13)				
P64	1310	3310355	24447	0.74
P65	1276	3348263	15850	0.47
P66	1283	3338947	17754	0.53
P67	1289	3340216	16576	0.50

* Block J appeared in both BIB and UBIB booklets
** Block R " " " " " " "

Table III.6

NAEP 1983-84
Number of Blocks Administered:
BIB/UBIB Spiral and Paced Tape Sample
Grade 11/Age 17 Students

Block	Total	Weighted N	Standard Error (of Weighted N)	Coefficient of Variation
BIB/UBIB Spiral (Grade 11/Age 17)				
A	3098	434407	5944	1.37
B	3093	433284	4421	1.02
C	3084	433397	6444	1.49
D	3124	437093	4105	0.94
E	3089	426863	4567	1.07
F	3082	431695	4191	0.97
G	3122	435883	4746	1.09
H	3100	433534	3556	0.82
J*	4701	663249	5079	0.77
K	3080	430441	5638	1.31
L	3100	436102	4483	1.03
M	3045	427213	6988	1.64
N	3066	430797	4774	1.11
O	3095	433640	4743	1.09
P	3120	435059	5844	1.34
Q	3083	436621	4803	1.10
R**	4641	649350	6015	0.93
S	3084	431261	4242	0.98
T	3076	432770	4213	0.97
U	3109	437217	5054	1.16
V	3102	435765	4342	1.00
W	3071	429283	5091	1.19
X	3056	427368	4446	1.04
Y	3080	430553	4524	1.05
Total Spiral	28861	4045040	11103	0.27
Paced Tape (Age 17)				
P64	1539	3048025	9151	0.30
P65	1540	3045282	12441	0.41
P66	1596	2978520	30679	1.03
P67	1534	3026687	10433	0.34

* Block J appeared in both BIB and UBIB booklets
** Block R " " " " " " "

The second purpose was accomplished by collecting this cycle of 168 booklets into bundles of 23 consecutive booklets, with consecutive bundles beginning where the previous bundle left off; the last of the 168 booklets was always followed by the first in a continuous circling process (hence the term "spiralling"). As a result, 168 different bundles were created and each booklet distributed evenly throughout 23 positions in the bundles. By shipping consecutive bundles to schools, the likelihood that any given booklet would be used was equalized across the sample.

The appearance of each booklet in each position of an administration sequence was also equalized. Table III.7 lists the number of booklets administered; Tables III.8 and III.9 contain charts of spiralling results.

D. Sample Design

Westat, Inc. and the Research Triangle Institute (RTI) played major roles in sample design, selection, and field administration for the 1983-84 NAEP assessment. The 1983-84 sample design is described in detail in a technical report issued by Westat in 1985. This section is intended as a brief overview of the sample design.

NAEP uses a stratified, three-stage national probability sample design. The first and second sample stages were designed by RTI. County and school sample selection was made by RTI and monitored by ETS/Westat. Final student selection was made by Westat staff as they collected data in the schools (see Chapter IV for information concerning the role of Westat staff in conducting assessment sessions). Briefly, the sample design consisted of the following:

1. Regions/Primary Sampling Units

In the first stage of sampling, the United States was divided into geographical units comprised of counties, or groups of contiguous counties, which met a minimum school enrollment size. These units, called Primary Sampling Units (PSUs), were stratified by both region and size of community. A sample of 64 PSUs was then selected (with replacement) to represent all regions and sizes of communities with probability proportional to population size measures.

2. Schools

In the second stage of sampling, all public, private, Catholic, Bureau of Indian Affairs, and Department of Defense schools were listed according to the three grade/age groups within each of the 64 PSUs.

To allow sampling of extreme-low Socioeconomic Status (SES) big-city schools at a rate twice that of all others, schools were stratified by SES within big-city PSUs. Extreme-rural schools were also oversampled by a factor of two

Table III.7

NAEP 1983-84 Number of Booklets Administered
BIB/UBIB Spiral and Paced Tape Sample

Booklet Number	Gr. 4/Age 9	Gr. 8/Age 13	Gr. 11/Age 17
1	310	355	346
2	311	346	363
3	316	343	355
4	319	340	354
5	309	346	339
6	320	331	341
7	317	335	335
8	306	342	333
9	315	338	336
10	308	344	342
11	309	343	327
12	309	349	337
13	309	353	324
14	306	344	340
15	309	343	333
16	305	339	337
17	308	336	340
18	296	348	338
19	308	357	340
20	302	343	340
21	312	336	340
22	313	337	347
23	305	328	354
24	307	332	338
25	317	328	336
26	312	325	344
27	315	327	350
28	329	322	347
29	319	328	349
30	317	314	350
31	307	324	338
32	316	332	345
33	306	331	344
34	296	328	344
35	302	335	340
36	311	336	344

Table III.7
(continued)

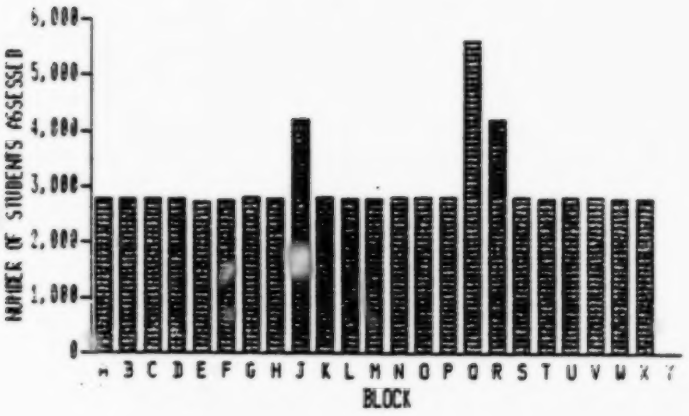
NAEP 1983-84 Number of Booklets Administered
BIB/UBIB Spiral and Paced Tape Sample

Booklet Number	Gr. 4/Age 9	Gr. 8/Age 13	Gr. 11/Age 17
37	303	336	350
38	306	342	345
39	306	346	335
40	291	352	343
41	308	346	348
42	290	345	359
43	292	344	353
44	305	342	349
45	317	352	345
46	313	344	343
47	314	332	338
48	310	330	341
49	317	325	348
50	309	338	351
51	315	323	349
52	322	338	350
53	316	349	356
54	312	350	344
55	316	338	347
56	313	349	329
57	317	339	346
58	1422	1516	1572
59	1396	1527	1537
60	1416	1529	1574
61	1395	1513	1528
62	1385	1520	1528
63	1405	1502	1543
	Paced Books		
64	1403	1310	1539
65	1356	1276	1540
66	1389	1283	1596
67	1344	1289	1534
Total	31579	33563	35070
Total BIB/UBIB	26087	28405	28861
Total Paced	5492	5158	6204

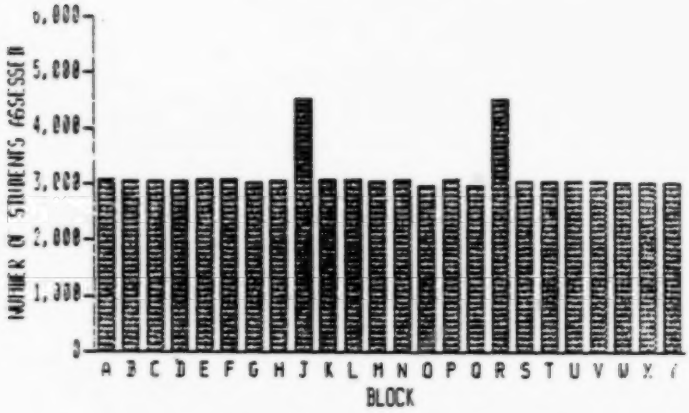
Table III.8

NAEP 1983-84 BIB Spiral Sample
Number of Students per Block

AGE 9 / GRADE 4 (TOTAL N = 26,887)



AGE 13 / GRADE 8 (TOTAL N = 28,485)



AGE 17 / GRADE 11 (TOTAL N = 26,661)

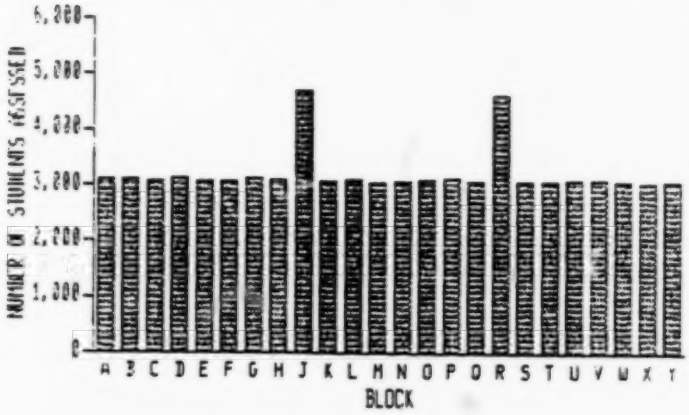
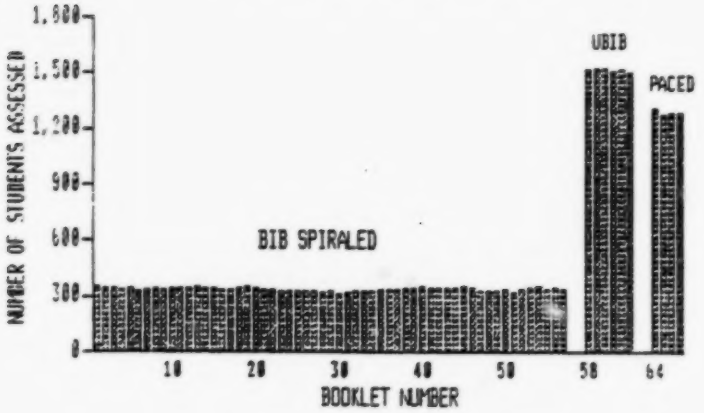


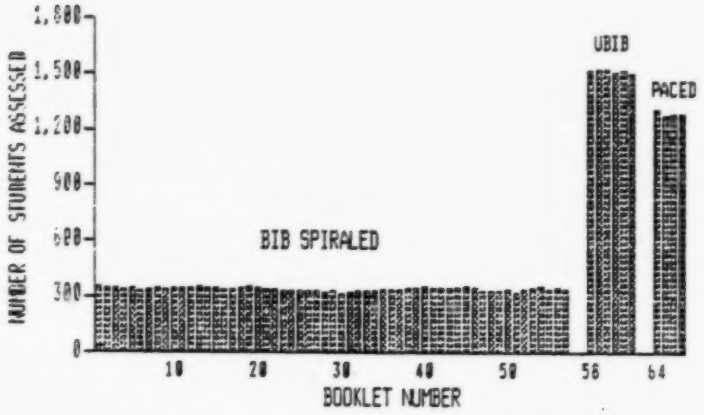
Table III.9

NAEP 1983-84 BIB/UBIB Spiral and Paced Tape Sample
Number of Students per Book

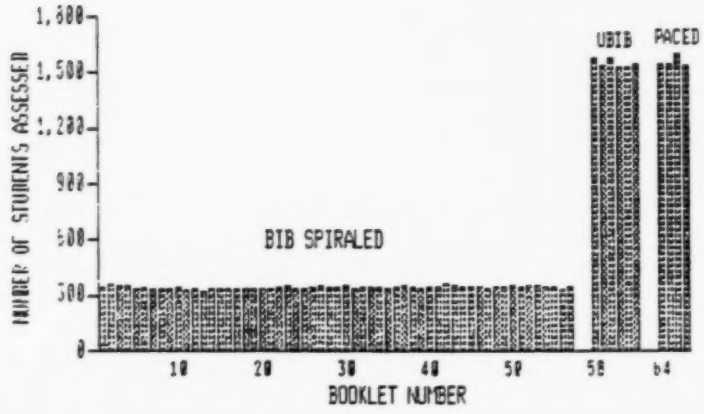
AGE 9 / GRADE 4 (TOTAL N = 31,579)



AGE 13 / GRADE 8 (TOTAL N = 33,563)



AGE 17 / GRADE 11 (TOTAL N = 35,870)



within extreme rural PSUs. Extreme-low SES and extreme-rural schools were oversampled to insure adequate sample sizes, thereby enhancing the reliability of estimates.

Schools within each PSU were selected (without replacement) with probabilities proportional to assigned measures of size. Roughly equal measures of size were assigned to schools containing estimates of age-eligible students ranging from 20-160 (for age 9), or 20-200 (for ages 13 and 17). Schools above the indicated maximum size were selected with probabilities proportional to the number of age-eligible students. Schools with less than 20 estimated age-eligibles were assigned considerably lower measures of size, since they had higher per-student administrative costs.

Of the resulting total original sample of 1,705 schools, there were 197 refusals at the school and district levels, and 147 schools were eliminated because they were out-of-range, closed or had no eligibles enrolled. This resulted in 1,361 cooperating schools*, to which a number of schools were added to replace the refusing schools. The total number of schools on the Public-Use Data Tapes files is 1,480; in several of these, no eligible students were selected. Assessments were conducted in 1,465 schools.

3. Students

In the third stage of sampling, a consolidated list of all grade-and-age-eligible students was established for each selected school. A systematic selection of eligible students was made, students were assigned to Spiral or Paced Tape sessions, and assessment booklets were administered to selected students.

Of the 104,437 students sampled for the 1983-84 assessment, 4,225 were exluded from participation because they were judged by school personnel to be educable mentally retarded, non-English speaking, or functionally disabled. Spiral sessions were administered to 83,353 students; Paced Tape sessions were administered to 16,859 students. Table III.10 provides information concerning grade/age coverage.

4. Questionnaires

The School Characteristics and Policy, Excluded Student, and Teacher Questionnaires were distributed in every sampled school. If the forms were completed promptly, the supervisor returned them to ETS. The School Characteristics and Policy

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*A cooperation rate of 88.1 was achieved. See the NAEP 1983-84 Technical Report for the rate calculation method.

Table III.10

NAEP 1983-84
Number of BIB/UBIB Students by Grade/Age

Grade 4/Age 9 Students

	AGE			
	< 9	= 9	> 9	TOTAL
GRADE < 4				
UNWEIGHTED N	0	5917	0	5917
WEIGHTED N	0	761524	0	761524
STANDARD ERROR	-	8099	-	8099
COEFF. OF VAR.	-	1.06	-	1.06
GRADE = 4				
UNWEIGHTED N	158	12953	6984	20095
WEIGHTED N	21504	2295588	883198	3200290
STANDARD ERROR	2395	9067	7089	14047
COEFF. OF VAR.	11.14	0.39	0.80	0.44
GRADE > 4				
UNWEIGHTED N	0	75	0	75
WEIGHTED N	0	9936	0	9936
STANDARD ERROR	-	2163	-	2163
COEFF. OF VAR.	-	21.77	-	21.77
GRADE TOTAL				
UNWEIGHTED N	158	18945	6984	26087
WEIGHTED N	21504	3067047	883198	3971749
STANDARD ERROR	2395	13693	7089	18935
COEFF. OF VAR.	11.14	0.45	0.80	0.48

Table III.10
(continued)

NAEP 1983-84
Number of BIB/UBIB Students by Grade/Age

Grade 8/Age 13 Students

	AGE			
	< 13	= 13	> 13	TOTAL
GRADE < 8				
UNWEIGHTED N	0	6495	0	6495
WEIGHTED N	0	1034711	0	1034711
STANDARD ERROR	-	6087	-	6087
COEFF. OF VAR.	-	0.59	-	0.59
GRADE = 8				
UNWEIGHTED N	184	14515	7151	21850
WEIGHTED N	25662	2269841	1018446	3313949
STANDARD ERROR	4070	4025	6860	7824
COEFF. OF VAR.	15.86	0.18	0.67	0.24
GRADE > 8				
UNWEIGHTED N	0	60	0	60
WEIGHTED N	0	14769	0	14769
STANDARD ERROR	-	4144	-	4144
COEFF. OF VAR.	-	28.06	-	28.06
GRADE TOTAL				
UNWEIGHTED N	184	21070	7151	28405
WEIGHTED N	25662	3319320	1018446	4363428
STANDARD ERROR	4070	8088	6860	11281
COEFF. OF VAR.	15.86	0.24	0.67	0.26

Table III.10
(continued)

NAEP 1983-84
Number of BIB/UBIB Students by Grade/Age

Grade 11/Age 17 Students

	AGE			
	< 17	= 17	> 17	TOTAL
GRADE < 11				
UNWEIGHTED N	0	4129	0	4129
WEIGHTED N	0	671683	0	671683
STANDARD ERROR	-	21099	-	21099
COEFF. OF VAR.	-	3.14	-	3.14
GRADE = 11				
UNWEIGHTED N	2386	16787	3692	22865
WEIGHTED N	399289	2037738	635595	3072622
STANDARD ERROR	22106	3439	21691	6816
COEFF. OF VAR.	5.54	0.17	3.41	0.22
GRADE > 11				
UNWEIGHTED N	0	1867	0	1867
WEIGHTED N	0	300736	0	300736
STANDARD ERROR	-	20072	-	20072
COEFF. OF VAR.	-	6.67	-	6.67
GRADE TOTAL				
UNWEIGHTED N	2386	22783	3692	28861
WEIGHTED N	399289	3010157	635595	4045041
STANDARD ERROR	22106	8221	21691	11104
COEFF. OF VAR.	5.54	0.27	3.41	0.27

Questionnaire was mailed to the school by Westat prior to the assessment. All other questionnaires were distributed by the supervisor at the time of the assessment.

An Excluded Student Questionnaire was completed for every student who was selected but had to be excluded from the assessment. A subgroup of students sampled through Spiral sessions was identified for administration of the Teacher Questionnaire. This subsample was equal to the number of Spiral sessions conducted in the school. Thus, if there were six Spiral sessions conducted in a school, a subsample of six students was selected and the school coordinator was asked to identify the English or Language Arts instructor for each student. These instructors completed the Teacher Questionnaires. Please note that, as a number of students may have had the same teacher, and some teachers did not complete the questionnaire, the number of students in the subsample is greater than the number of teachers who completed questionnaires in a given school.

Overall, 88.7 percent of the School Characteristics and Policy Questionnaires, 92.7 percent of the Excluded Student Questionnaires, and 86.9 of the Teacher Questionnaires were completed and returned to ETS.

The Principal Questionnaire, distributed to each sampled school by Westat prior to the assessment, was used by Westat to determine an estimate of grade/age eligible students. (Principal Questionnaire data is not available on the Public-Use Data Tapes.)

5. Sampling Weights: Caveats

NAEP uses differential sampling rates. Some subpopulations are deliberately oversampled in order to obtain larger samples of respondents in various reporting groups. Also, adjustments for nonresponse introduce differential weights. The use of post-stratification and certain other design features is also reflected in the weights that are provided (see Sections 6 and 7 below). Consequently, sampling weights are supplied on the data files so that each respondent can be represented in the desired proportion in data analyses.

a. Oversampled Subpopulations

As a result of oversampling, certain subpopulations, which have different characteristics from the rest of the population, are overrepresented in the sample. Analyses which ignore this overrepresentation may produce biased and misleading data, since the subpopulations may have unwarranted impact on results. Consequently, NAEP sampling weights should be used for all analyses, whether exploratory or confirmatory.

b. Age Population

The sample of students responding to any one of the four Paced Tape booklets assigned to a given age is a representative sample of the population of all students of that age. Consequently, an estimate of the total number of age-eligible students in the population can be obtained by summing the sampling weights of all students (including excluded students) selected to receive a specified Paced Tape booklet. Since there are four Paced Tape booklets, there are four separate estimates of the total available. These totals are shown in Tables III.4, III.5 and III.6. Another estimate would be the average of these four estimates.

Similarly, an estimate of the total of a given subpopulation of age-eligible students (e.g., 9-year-old Hispanic students) may be obtained by summing the sampling weights for that subpopulation of all such students (including excluded students) selected to receive any given one of the Paced Tape booklets. A better estimate of this total is the average of the four totals, one from each Paced Tape booklet.

The sample of students who responded to any of the Spiral booklets who are also of the given age is also a representative sample of the population of age-eligible students. Consequently, an estimate of the total number of age-eligible students can be obtained by summing the weights for all students (including excluded students) responding to any of the Spiral booklets who were also in the specified age class. Estimates of subpopulation totals can be obtained by further restricting the summation to students who are additionally in the desired subpopulation.

c. Grade/Age and Grade Populations

An estimate of the total population of grade/age-eligible students can be obtained by summing the sampling weights of all the students (including excluded students) who responded to any of the Spiral booklets. An estimate of the total population of grade-eligible students can be obtained by summing the weights of all students (including excluded students) responding to any Spiral booklet who were also in the modal grade (i.e., grade 4, 8, 11).

d. Weighted N

Please note that the "Weighted N" appearing next to the total number of administrations of each of the BIB/UBIB blocks in Tables III.4, III.5 and III.6 is not an estimate of the national population of grade/age eligibles. Weighted N is an estimate of the total number of grade/age eligibles who would have been assigned the block if every grade/age eligible student in the nation had been assessed using the BIB spiralling design. This estimate is roughly one-ninth of the total national population of grade/age eligibles for all blocks except those which appeared in both BIB and UBIB booklets.

e. Standard Errors

The sampling weights are statistics and are therefore subject to variability. Standard errors of any population estimates (such as those indicated in the above paragraphs) can be computed using the jackknife procedures described in Chapter IV.

The standard error of the weighted N shown in Tables III.4, III.5 and III.6 were computed using the jackknife procedures. The column headed "Coefficient of Variation" presents the standard error as a percent of the weighted N.

6. Weights Contained on the Public-Use Data Tapes

NAEP has provided two types of weights for the 1983-84 assessment: full-sample weights and replicate weights used for variance estimation. Both the full sample and replicate weights include adjustments for nonresponse and post-stratification.

a. Student Weights

1. Full-Sample Weight:

- Student full-sample weight (WEIGHT): Use for analysis at the student level

The following weights should not be used for student analysis. These weights were used in deriving the final student full-sample weight (WEIGHT):

- PSU weight (PSUWT)
- School weight conditional on PSU (SCHWT)
- Session weight conditional on school (SESSWT)

- Student base weight conditional on session type (STUDWT)

Computation of the student full-sample weight is described in Section 7 below.

2. Replicate Weights:

- Jackknife replicate weights 01 to 32 (JKWTxx): Use these weights for computing jackknife variance estimates at the student level

Use and computation of these weights are described in Chapter IV, Section H.

b. Teacher-Student Weights

Note: The teacher-student weights are appropriate for use in estimating the number or percent of students in the total population who have various characteristics; they are not appropriate for use in estimating the number of teachers, or the number of teachers with various characteristics. They are supplied only for a subsample of students who were selected from the full NAEP sample and are appropriate for use in analyses involving the teacher-characteristics of students. For example, these weights would be used to estimate the proportion of students who have Hispanic language arts teachers.

1. Full-Sample Weight:

- Final teacher-student weight (TSTUWTF): Use for analyses when teachers' characteristics are linked to students

The following weights should not be used for teacher analysis. These two within-school weights were used in deriving the final teacher-student weight (TSTUWTF):

- Teacher-student weight adjusted for nonresponse (TSTUWTN)
- Teacher selection weight (TSELWT)

2. Replicate Weights:

- Teacher-student replicate weights 01 to 32 (TSWTxx): Use these weights for computing jackknife variance estimators when teachers' characteristics are linked to students

c. Excluded Student Weights

1. Final Weight:

- Excluded student final weight (XWEIGHT): Use for analysis of the Excluded Student Questionnaire data

The following weights should not be used for excluded student analysis. These three weights were used to derive the final excluded student weight (XWEIGHT):

- PSU weight (XPSUWT)
- School weight conditional on PSU (XSCHWT)
- Within-school student weight (WSEXWT)

2. Replicate Weights:

- Jackknife replicate weights 01 to 32 (EXWTxx): Use these weights for computing jackknife variance estimators for the Excluded Student Questionnaire data

d. School Weights

1. Full Sample:

Note: To weight and analyze (at the school level) the School Questionnaire data, multiply the following weights:

Final Weight = SCHNRFS x SPSUWT x SSCHWT

- School nonresponse factor, Spiral (SCHNRFS)
- PSU weight (SPSUWT)
- School weight conditional on PSU (SSCHWT)

The following weights should not be used for school analysis. These weights were used to derive the final school full-sample weight.

- Overall school weight, Paced Tapes (SCHWTT)
- School session weight (SWTSPI)
- School session weight, specific Paced Tape session (SWTTAP)
- Overall school weight, Spiral (SCHWTS)

7. Weighting Procedures

This section contains additional information about the procedures used by NAEP to derive weights. Readers who do not need detailed technical information concerning the derivation of weights may disregard this section of the guide.

The standard full-sample weight (WEIGHT) consists of the student's base weight multiplied by the various adjustments described in Sections a through g below.

The base weight assigned to a student is the reciprocal of the probability that the student was invited to a particular type of assessment session, i.e., a Spiral session or a particular Paced Tape session. That probability is the product of four factors:

1. The probability that the PSU was selected (PSUWT);

2. The conditional probability, given the PSU, that the school was a member of the sample selected by RTI or any supplementary sample selected by Westat (SCHWT);

3. The conditional probability, given the sample of schools in a PSU, that the school was allocated the specified type of session (SESSWT); and

4. The conditional probability, given the school, that the student was invited to the specified type of session (STUDWT).

Thus, the base weight for a student may be expressed as the product

$$W = W_1 \cdot W_2 \cdot W_3 \cdot W_4$$

where

W_1 = PSU weight;

W_2 = school weight conditional on the PSU;

W_3 = the reciprocal of the conditional probability, given the sample of schools, that the school is allocated a specified type of session; and

W_4 = the reciprocal of the within-school selection probability for students sampled for Spiral or a specific Paced Tape session.

The PSU weight, W_1, was provided by RTI. When partial PSU replacements were identified (see technical report issued by Westat in 1985), the PSU weight associated with the schools in the replacement county(ies) was that of the originally selected PSU.

The school weight, W_2, was provided by RTI in a computer file of sample schools. The computation of the probability of selection for schools in the supplementary sample selected by Westat whenever the original sample turned out to be too small is discussed in the Westat technical report, as is the computation of the school weight for substitute schools.

The session allocation weight, W_3, was computed by enumeration of all possible allocations yielded by the algorithm used by Westat to allocate Paced Tape and Spiral sessions to sample schools or school clusters (see the Westat technical report).

For Spiral sessions, the within-school student weight, W_4, is simply the sampling interval for selecting students for Spiral sessions. For Paced Tape sessions, the within-school student weight accounts for whether or not there was Spiral sampling in the school and the conditional sampling interval for Tape.

a. Adjustment of Base Weights for Nonresponse

The base weight for a student was adjusted by two nonresponse factors: one to adjust for non-cooperating schools and one to adjust for students that were invited to the assessment but did not appear either in the scheduled session or in a makeup session. Thus the within-PSU nonresponse adjusted weight was of the form

$$W_w = W_2 f_1 W_3 W_4 f_2$$

where the nonresponse adjustment factors, f_1 and f_2, were computed as described below.

b. School Nonresponse Adjustment

School nonresponse factors were computed separately within each PSU for up to two or three classes of schools using as many nonresponse classes as the number of sampled schools in the PSU and

nonresponse pattern allowed. However, since it was required that each class contain at least four or five schools, often only one class was identified in the PSU.

For any nonresponse class, c, the school nonresponse factor for Spiral sessions is given by

$$f_{1c} = \frac{\sum_{i \in A} W_i G_i}{\sum_{i \in B} W_i G_i}$$

where

W_i = school weight (the reciprocal of the probability of selection of the school conditional on the PSU);

G_i = estimated number of grade-eligible students in school i based on QED data (see Chapter IV, Section J) and/or the Principal Questionnaire;

set A consists of the original sample of eligible schools (including supplemental, new and refusing schools, but not substitutes); and

set B consists of all cooperating schools (including schools that were substituted for non-cooperating schools).

Note that, for a substitute school, W_i was defined as the weight of a school with the same measure of size as if it had been selected by the probability selection procedure.

A school nonresponse adjustment was applied to the base weight of students in Spiral but not Paced Tape sessions, as the four required Paced Tapes per PSU were always allocated to the cooperating schools in a PSU. As a result, only weights for Spiral sessions were affected by school nonresponse.

c. Student Nonresponse Adjustment

Student nonresponse adjustment factors were computed separately for Spiral sessions and for each of the four Paced Tape sessions within each PSU.

d. Nonresponse Adjustment for Students in Paced Tape Sessions

For each Paced Tape session, t, in a PSU, the nonresponse factor f_{2t} was computed by

$$f_{2t} = \frac{n_t}{n_t'}$$

where

n_t = number of students invited to the particular Paced Tape session in the PSU; and

n_t' = number of students who completed the session.

Note that in the common situation where all students invited to a Paced Tape session were from a single school, no school weight (such as appears below in the adjustment factor for Spiral sessions) is needed to compute the nonresponse adjustment factor; the weighted ratio equals the unweighted ratio. In the occasional situation where a school cluster was involved, it would have been appropriate to introduce the school weight in the adjustment. This was not done because of the infrequent occurrence of school clusters, and because the aggregate effect of applying the school weights in such cases would have been only marginally different from the adopted procedure of using the ratio n_t/n_t'.

e. Nonresponse Adjustment for Students in Spiral Sessions

For Spiral sessions, the student nonresponse adjustment was made separately for two classes of students: those in or above the modal grade for their age and those below the modal age.

The factor for students in class c in a particular PSU was computed by

$$f_{2c} = \frac{\sum_i W_i n_{ic}}{\sum_i W_i n_{ic}'}$$

where the summations extend over the schools in the PSU and

n_{ic} = number of Spiral invited students in school i and student class c;

n'_{ic} = number of Spiral tested students in school i and student class c; and

W_i = the reciprocal of the probability of assignment of a student in school i to a Spiral session, conditional on the PSU, adjusted for school nonresponse.

f. Adjustment for Missing Paced Tape Sessions

In a few instances, the supervisor inadvertently administered Spiral booklets rather than the assigned Paced Tape booklet. Or, a school which was allocated a Paced Tape session refused just before the assessment was conducted, without providing enough time to reassign the Paced Tape session to another school. This occurred in seven of the 768 Paced Tape sessions assigned to the three grade/age groups.

The following imputation procedure was used to deal with this type of nonresponse. For variance computation purposes, the 64 NAEP PSUs had been grouped into 32 pairs. Let the PSU requiring the imputation be called the "recipient" PSU and the other member of the same pair the "donor" PSU. A one-half subsample of the students administered the particular Paced Tape session in the donor PSU was transferred to the recipient PSU. The weights of students involved in the imputation were adjusted as follows:

The students that remained in the donor PSU had their overall weight doubled by doubling the within-school student weight, since this one-half subsample also represented those students transferred to the recipient PSU. The overall weight for records in the recipient PSUs was the product of its original PSU weight, the other three weights, and the student nonresponse adjustment carried from the donor PSU. The weight associated with the allocation of the particular Paced Tape session, the doubled within-school weight, and the student nonresponse adjustment were carried without modification from the donor PSU. The school weight of the donor school was adjusted by the ratio of the donor PSU weight to the recipient PSU weight, that is:

$$W_{2R} = \frac{W_{1D}}{W_{1R}} \cdot W_{2D} \quad .$$

g. Post-stratification

The weights determined in the manner described in the preceding subsections were adjusted by post-stratification in order to reduce the sampling error of estimates relating to student populations that span several subgroups of the total population. Post-stratification replaced the "smoothing" that was done in the prior NAEP assessments. In the prior assessments, for each age class, a separate curve, one for each of six subclasses (e.g., blacks in the South), was fitted by robust procedures to the total number of students as estimated by previous NAEP rounds to provide an adjustment target figure to reduce discontinuities between successive NAEP assessments. For the 1983-84 assessment, smoothing was accomplished by post-stratification. The post-stratification was performed for each grade/age group and separately for Spiral sessions, and for each of the four Paced Tape sessions. It was performed by modifying the weights of the sample students in such a way that resulting estimates of the total number of students in specified subgroups of the population were the same as the presumably better estimates that were made from other sources for each of these subgroups. (These procedures are described in detail in the Report on Sample Selection, Weighting and Variance Estimation: NAEP-Year 15 issued by Westat in 1985.)

h. Weights Used for Variance Estimation (JKWTxx)

Variances for NAEP estimates are computed by a jackknife repeated replication method. This method involves the use of a series of weights JKWT01 through JKWT32.

For information about the use of these weights and how they were computed, see Chapter IV, Section H.

IV. Data Collection, Scoring and Reporting

IV. Data Collection, Scoring, and Reporting

A. Sample Selection and Data Collection

Westat was responsible for sample selection and field administration for the 1983-84 NAEP assessment (see Chapter III). The sample selection and data collection activities conducted by Westat included the following:

1. Sample Selection (RTI/Westat)

   Based upon the 1983-84 sampling design, RTI selected and Westat invited more than 100,000 primary, elementary and secondary school students from more than 1,400 schools in 64 PSUs to participate in the 1983-84 assessment. Each administration was coordinated by a district supervisor responsible for conducting sessions in four PSUs and for maintaining the security of NAEP materials and the confidentiality of assessment data.

2. Field Administration (Westat, Inc.)

   Supervisors provided school personnel with general information about NAEP and worked with them to ensure student attendance at each assessment session. Each supervisor was assisted by two exercise administrators. Supervisors and exercise administrators were responsible for completing student sample selection in each school, establishing assessment schedules; ensuring that schools were properly prepared for sessions, collecting and checking all NAEP materials, and returning them to ETS.

The weights provided on the Version 3.1 Public-Use Data Tapes were established through the sampling procedures described above and in Chapter III.

B. Data Entry System

Due to the limited time available to ETS to organize the data collection activity for the 1983-84 assessment, it was not possible to design a scorable answer document. Rather, students marked their answers directly on assessment booklets. Therefore, it was essential to create a data entry system that would allow entry of information as it was received from the field. ETS designed an intelligent, direct data entry computer system to accommodate the BIB/UBIB design so that, when a booklet was presented to the system, it automatically prepared for appropriate exercise sets by setting up corresponding formats or data descriptions. The system also permitted on-line editing of the information entered into the computer. As a result, NAEP staff began processing each booklet upon receipt, and incoming data were analyzed much earlier than in previous assessments.

C. Data Editing

Editing included an assessment of the internal logic and consistency of the data received. For example, data were examined for non-existent school IDs, out-of-range values, and illogical or inconsistent responses (e.g., a questionnaire in which a teacher indicated "I do not use a textbook for reading," but then entered the name of a textbook used for reading). Where possible, conflicts in the data were resolved. If resolution was not possible, the information was left in the form in which it was received.

1. Multiple Responses

In cases where students, teachers, or school personnel provided more than one response to a single-response item, specific guidelines and rules were developed to recode multiple responses in a consistent and accurate manner. For example, for Grade 4/Age 9 and Grade 8/Age 13, the text below appeared as item number 10 in exercise block J and as item number 26 in the common block in Paced Tape booklets:

If you go home, who is usually there?
A. No one
B. My brother(s) and/or sister(s)
C. My mother or father
D. Another adult (Who?) _____

In administering this item, NAEP personnel wanted to ascertain whether an adult was usually present when a student was at home. As a result, if a student responded to the item by circling B and C, the response was coded as C: circling B and D, the response was coded as D; circling C and D, the response was coded as C; or, circling A and D, the response was coded as D. All other combinations were assigned a multiple response code.

D. Professionally-Scored Items

As in previous assessments, the 1983-84 session included items which required open-ended responses. In order to score these responses, NAEP recruited a team of readers, each of whom were trained in both holistic scoring (which concentrates on the overall quality of an essay) and in primary trait scoring (which focuses on specific characteristics of an essay). In both cases, readers used scoring guides specifically designed for each item. Some of the items were used in previous reading/writing assessments, while others were developed for the 1983-84 session. The scoring guides for items from previous sessions were reviewed and updated for the 1983-84 session, and the guides for newly-developed items were constructed using field tryout data.

Twenty percent of the items were subjected to reliability checks in which the responses were read by a second reader who was not provided with the score assigned by the first. Discrepancies in the

scores assigned by the first two readers were resolved by the scoring supervisor. The scores for open-ended items are included on the Public-Use Data Tapes (see the NAEP Technical Report for a detailed discussion of professional scoring).

E. Quality Control

NAEP measured the accuracy of its data entry operation to determine how precisely the data moved from receipt of the instrument to the subsequent machine-readable dataset. For this purpose, a number of student booklets and questionnaires were selected at random and compared, character by character, with their representation on a disk file. The number of booklets and questionnaires involved in quality control checks was based upon the number needed to establish a statistically reassuring conclusion about the accuracy of the entire data entry operation. Student booklets and questionnaires for all three grade/ages were included in quality control checks.

F. Reading Item Analysis and Scale Derivation

To produce NAEP reading results on a single scale, even though students responded to different sets of reading exercises, it was hypothesized that a single unobservable proficiency variable governed students' chances of responding correctly to a subset of 228 of the 252 reading exercises. It was also hypothesized that the same variable would account for responses to the reading exercises in the Paced Tape administrations, possibly after a linear transformation to account for effects of the mode of administration. Using this unobservable proficiency variable, one can compare levels of performance across subpopulations or indicate trends over time as a single proficiency related to all items in the subset, rather than as percentages of correct response to individual items. The following sections describe the model employed to accomplish these objectives and relative variables found on the user tape.

1. Item Response Theory

Item response theory (IRT) models the probability that a given student will response correctly to a given item as a function of a parameter characterizing the proficiency of that student and one or more parameters characterizing that item. Statements about students' proficiencies can therefore be made with reference to a common proficiency scale even though students have responded to different items. This method facilitates comparisons of NAEP subpopulations, ages and grades, and time points, since analyses need not be limited to the examination of percents correct on items taken in common among comparison groups.

The particular IRT model employed for NAEP reading exercises was the three-parameter logistic model

$$P(x_{ij} = 1 | \theta_i, a_j, b_j, c_j) = c_j + (1 - c_j)/\{1 + \exp[-1.7a_j(\theta_i - b_j)]\} \quad ,$$

where

- x_{ij} is the response of student i to item j, 1 if correct and 0 if incorrect;
- θ_i is the (unobservable) proficiency of student i;
- a_j is the slope parameter of item j, characterizing its sensitivity to proficiency;
- b_j is the threshold parameter of item j, characterizing its difficulty; and
- c_j is the lower asymptote parameter of item j, reflecting the chance of a correct response from pupils of very low proficiency (c parameters were estimated for multiple-choice items, but fixed at zero for open-ended response items).

2. Item Parameter Estimation

The first step in implementing the IRT model was the determination of the collection of items to which the model was to be fit. First, the assumption that all items would reflect a single proficiency led to concentration upon those items traditionally thought of as "reading exercises" (distinct from the NAEP "study skills" items that call for specific knowledge such as how to use tables of contents or bar charts). Second, only Spiral assessment booklets that had at least two eligible item blocks (those containing "reading items"--see Table IV.1) were used to fit the model and to compute IRT item parameters. (Spiral assessment booklets that contained at least one of the eligible blocks were used to estimate reading proficiency scores--see Section IV.4.)

BIB/UBIB Spiral blocks and Paced Tapes containing items used for the IRT analysis are listed in Table IV.1. BIB/UBIB Spiral booklets and Paced Tapes used for the IRT analysis are listed in Table IV.2; the table indicates whether the items contained in each booklet were used to estimate reading proficiency scores (S), were used to estimate reading proficiency scores and calibrate IRT parameters (C), or were not used in the IRT analysis at all (-).

Table IV.1

NAEP 1983-84
BIB/UBIB Spiral Blocks and Paced Tapes Containing Items Used for IRT

BIB/UBIB Spiral Blocks

	BIB/UBIB Spiral Block														
	H	J*	K	L	M	N	O	P	Q	R	U	V	W	X	Y
Grade 4/Age 9	x	x	x	x	x	x	x	x	x	x	x	x	-	-	0
Grade 8/Age 13	x	x	x	x	x	x	x	x	x	x	x	-	-	-	x
Grade 11/Age 17	x	x	x	x	x	x	x	x	x	x	x	-	-	-	x

Paced Tapes

	Paced Tape			
	P64	P65	P66	P67*
Age 9	x	x	x	x
Age 13	x	x	x	x
Age 17	x	x	x	x

0 = block not administered to Grade 4/Age 9 students
* Item N001801 (FLY) in Block J and Paced Tape 67 was not used to compute proficiency values

Table IV.2

NAEP 1983-84 BIB/UBIB Booklets and Paced Tapes
Containing Items Used for IRT

S = Items Used for Scoring Only
C = Items Used for Scoring and Calibration
- = Neither (booklet contains no usable reading items)

Booklet	Grade 4/Age 9	Grade 8/Age 13	Grade 11/Age 17
1	S	S	S
2	C	C	C
3	-	-	-
4	-	-	-
5	S	S	S
6	S	S	S
7	C	C	C
8	C	C	C
9	C	C	C
10	-	-	-
11	S	S	S
12	S	S	S
13	C	C	C
14	C	C	C
15	S	S	S
16	C	C	C
17	C	C	C
18	S	S	S
19	C	C	C
20	S	S	S
21	S	S	S
22	C	C	C
23	C	C	C
24	S	S	S
25	C	C	C
26	S	S	S
27	C	C	C
28	C	C	C
29	C	C	C
30	C	C	C
31	C	C	C
32	C	C	C
33	C	C	C
34	S	S	S
35	C	C	C
36	S	S	S
37	S	S	S
38	C	C	C
39	S	S	S
40	S	S	S

Table IV.2
(continued)

NAEP 1983-84 BIB/UBIB Booklets and Paced Tapes
Containing Items Used for IRT

S = Items Used for Scoring Only
C = Items Used for Scoring and Calibration
- = Neither (booklet contains no usable reading items)

Booklet	Grade 4/Age 9	Grade 8/Age 13	Grade 11/Age 17
41	C	C	C
42	S	S	S
43	S	S	S
44	-	-	-
45	C	C	C
46	S	S	S
47	C	C	C
48	S	S	S
49	C	C	C
50	C	C	C
51	C	C	C
52	-	-	-
53	C	C	C
54	S	S	S
55	C	C	C
56	C	C	C
57	C	C	C
58	C	C	C
59	C	C	C
60	S	S	S
61	-	-	-
62	S	-	-
63	C	S	S

Paced Tape	Age 9	Age 13	Age 17
P64	C	C	C
P65	C	C	C
P66	C	C	C
P67	C	C	C

Across all grade/age levels in BIB/UBIB, 228 items were used in the IRT analysis. Appendix 1 (Chapter IX) lists each item used for the IRT analysis, with corresponding IRT parameters, standard errors and block or tape locations (block definitions are provided in Table VI.2 in Chapter VI).

Performance for open-ended response items (essays) is coded by professional scorers using a four- or five-point scale (primary trait scoring). For the IRT analysis, these ordered scales were dichotomized at the points shown in Table IV.3. The IRT parameters are available for computer extraction from the Machine-Readable Catalog (see Table VI.3 in Chapter VI).

The parameters of the items were then estimated using a prototype of an updated version of the BILOG computer program (Mislevy and Bock, 1982), modified to allow for items with different numbers of response alternatives. BIB Spiral responses from all grade/age groups were included in a single run. Only students who were administered a booklet containing at least two of the item blocks eligible for IRT analysis (Table IV.1) were included in the item parameter estimation run. However, once the items parameters were estimated, reading proficiency plausible values (see Section 4 below) were estimated for any student who was administered a booklet containing one or more of the eligible item blocks. The scale of the item parameter estimation run was set by standardizing the combined distribution of all students from all grade/ages responding to the booklets listed in Table IV.2. The numbers of students used for IRT parameter estimation were 13,913 for Grade 4/Age 9; 13,472 for Grade 8/Age 13; and 13,759 for Grade 11/Age 17.

Paced Tape items were estimated separately for each age, along with items from past reading assessments for that age. These Paced Tape scales were linked to the BIB Spiral scale by transforming the Paced Tape parameters so as to match the first two moments of the age population, as estimated from the Paced Tape sample, to the corresponding moments estimated from the randomly equivalent BIB Spiral sample. (See the NAEP Technical Report for details.) Resulting item parameter estimates appear in Appendix 1, accompanied by standard errors of estimation for each parameter.

3. The Reading Proficiency Scale

The θ scale, while theoretically unbounded, spans an effective range of about -4 to +4 in the NAEP populations. To facilitate discussion, an alternative "reading proficiency" (RP) scale was also derived. The RP scale is a number-correct score on a hypothetical 500-item test, comprised of items with equal "a" values of 1.5, equal "c" values of 0, and equally-spaced "b" values from -5.00 to +4.98. An RP value corresponding to a given θ value is the expected score on this

Table IV.3

NAEP 1983-84
Points of Dichotomization of Open-Ended Response Items
Used for IRT

Item	Point of Dichotomization*	Block		
		Gr. 4-Age 9	Gr. 8-Age 13	Gr. 11-Age 17
N001509	5	H	H	H
N001906	3	-	J	J
N002806	3	L	L	L
N003106	3	M	M	M
N003706	2	N	N	N
N004305	2	-	O	O
N004607	2	-	P	P
N007410	3	-	U	U
N007506	3	-	V	V
N008210	5	-	Y**	Y
N008907	2	J	-	-
N015907	2	-	-	Q

* Ratings lower than the dichotomization point were scored as "incorrect"; ratings higher than or equal to the dichotomization point were scored as "correct."

** Item N008210 also appeared in Paced Tape 66 for Grade 8/Age 13.

hypothetical test for a student with proficiency θ. The relationship is virtually linear in the region of θs from -4 to +4, and is approximated by

$$RP = 50\theta + 250.5 \quad .$$

4. Plausible Values

In most applications of IRT, precise information about each sampled student is desired for purposes of individual diagnosis, selection or placement. Typically, each student is administered a sufficient number of items to ensure an accurate estimate of proficiency; testing times of several hours are not unusual.

More efficient estimates of the distribution of proficiencies in a group of students can be obtained using NAEP's BIB Spiral sampling design, which solicits only a few responses per sampled student.

The advantages of more efficient estimation of population characteristics are countered by the inability to make precise statements about individuals. Point estimates of θ or RP that are in some sense optimal for each sampled student can lead to seriously biased estimates of population characteristics. One can, however, express what is known about student i's value, once his or her item responses (x_i) and background and attitude responses (y_i) have been observed, in terms of a plausible distribution for the students' θ: $p(\theta|x_i,y_i)$. The value of any function t of reading proficiency and other background variables could then be estimated from the NAEP data by evaluating the integral

$$\varepsilon[t(\underset{\sim}{\theta},\underset{\sim}{y})|\underset{\sim}{x},\underset{\sim}{y}] = \int t(\underset{\sim}{\theta},\underset{\sim}{y})\, p(\underset{\sim}{\theta}|\underset{\sim}{x},\underset{\sim}{y})\, d\underset{\sim}{\theta} \quad ,$$

where vector-valued variables represent values over all sampled students.

Because evaluating such integrals is generally difficult, the user tapes provide partial computations to facilitate user applications. For each sampled student who was administered at least one of the IRT item blocks, five values are provided, selected at random from $p(\theta|x_i,y_i)$, where x_i denotes the student's responses to all of the 228 calibrated items to which he or she has responded, and y_i denotes status on age, grade, sex, race/ethnicity, size and type of community, parental education, and region of the country. These values may be referred to as "plausible values" of θ for student i. Corresponding values on the RP scale are also provided. Justification, details and properties of plausible values are provided in the NAEP Technical Report. The number of students

for which the plausible values are provided on the BIB/UBIB tape files are 23,132 for Grade 4/Age 9; 23,665 for Grade 8/Age 13; and 24,055 for Grade 11/Age 17.

To estimate a given function t involving θ or RP, one evaluates t using the n^{th} (n = 1, 2, 3, 4,or 5) plausible value for each student involved, as if those values were the true (and unobservable) θ or RP. The result is a good estimate of t when t involves only proficiency and one or more of the background variables specified above. Biases may result when other background variables are involved (see the NAEP Technical Report for details). Computing t with a different set of plausible values leads to a different but equally good estimate of t. The best estimate currently afforded is the average of all five such estimates, one corresponding to each set of plausible values. The variance among the five estimates reflects uncertainty due to not knowing precise values of θ or RP, and should be added to the sampling variance. (See Section G below concerning how to compute sampling variances, and Chapter V concerning how to combine variance estimates.)

G. Average Response Method (ARM) of Writing Proficiency

Standard item response theory has been developed to estimate an ability level based on a student's response to a pool of items, each of which has only two possible scores: acceptable or unacceptable. In contrast, the items for the assessment of writing proficiency require open-ended response, that is, essays. NAEP essays were scored by readers who evaluated specific characteristics of the essays (primary trait scoring).

Each essay was assigned a score on a five-point scale, defined as follows:

0 = no response (but exposed to the item)
1 = unsatisfactory response
2 = minimally satisfactory response
3 = satisfactory response
4 = elaborated response

The use of primary trait scoring to rate writing items precludes the use of standard IRT technology to model writing proficiency. While a number of generalizations of IRT procedures have been proposed to account for the characteristics of such types of ratings, their applications to these data have not yet yielded productive results.

It is, however, still desirable to be able to provide a common measure of writing ability to estimate the performance of any group or subgroup, even though no member of any subgroup took all of the items in the writing item pool. To accomplish this, the measure of writing ability has been defined to be the predicted mean score across a set of 10 writing items. This measure of proficiency is derived by a technique called the Average Response Method (ARM), which is a kind of

multiple regression. The ARM writing proficiency value for a given student is a prediction of what that student's mean score across the 10 writing items might plausible be, based on the student's scores on the writing items taken and the student's status on the background variables of grade, sex, race/ethnicity, size and type of community, parental education and region of the country.

The writing items selected to constitute the ARM writing value and the blocks containing them, by grade, are shown in Table IV.4. These items constitute the complete set of writing items which were (1) part of the BIB Spiral booklets and (2) presented to at least two grades. (Item N000502, which was given only to Grade 8, was included because it could be linked to item N000602, which was given in two grades.) At present, ARM values are provided only for students in the modal grade (Grade 4, 8 or 11) who responded to at least one of the 10 writing items[1].

1. The Basic Model

The assumed model for predicting a given student's ARM writing proficiency value, based on the student' background characteristics and scores on m of the 10 writing items, is the linear model

$$\hat{y}_{ik} = A_i \hat{\Gamma} = X_i \hat{\beta} = \hat{\gamma}_{ik}$$

where

$\hat{y}_{ik}$ is the k^{th} plausible value (in the sense of Section F.4 above) of the ARM proficiency value for the i^{th} student;

A_i is the 1 x k vector of constants giving the particular student's status on the various background variables;

$\hat{\Gamma}$ is the k x 1 vector of the effects of the background variables;

X_i is the 1 x m vector of scores received by the i^{th} student on the m writing items actually taken;

---

[1]We intend to estimate ARM values for students of the modal age (9, 13 or 17) but not in the modal grade--this will allow analyses by age. Details will be provided as an update.

Table IV.4

NAEP 1983-84
Writing Items Used for the ARM Writing Proficiency

Item	Block		
	Grade 4	Grade 8	Grade 11
N000102	A	A	A
N000202	B	B	B
N000302	-	C	C
N000402	D	D	D
N000502	-	E	-
N000602	E	E	-
N000702	F	F	F
N000802	F	F	-
N000902	G	G	-
N001002	G	G	G

$\hat{\beta}$ is the m x 1 vector giving the change in proficiency value for a unit change in the scores on each of the m items; and

$\hat{\gamma}_{ik}$ is an estimated residual draw from the predictive distribution of the ARM value given the observed values of A_i and X_i (discussed below).

2. Item Parameter Estimation

The parameters relating performance on a given set of writing items ($\hat{\beta}$) and background characteristics ($\hat{\Gamma}$) with mean performance on the complete set of 10 items were estimated by least-squares technology. To accomplish this it is sufficient to obtain estimates of the means, variances and inter-item covariances, by demographic subgroups, for the complete set of writing items. Because the ARM writing proficiency value is the mean of the 10 items, this in turn produces estimates, by demographic subgroups, of the proficiency value mean and variance as well as the covariances between the proficiency score and each of the 10 writing items. These provide a complete set of sufficient statistics for the standard least-squares prediction of an ARM proficiency value given background characteristics and scores on any subset of the 10 writing items.

Although no student was presented with more than 4 of the writing items and the majority of students were presented with only 1 or 2, the NAEP BIB Spiral design assured that every writing item assigned to be assessed in a given grade was presented to a representative sample of students from that grade. Furthermore, the sample of students in a given grade who were presented with any pair of the writing items also constituted a representative sample of students from that grade. This means that unbiased and consistent estimates of item means, variances, and inter-item covariances for the pool of writing items assigned to a given grade can be derived from the information provided by the respondents to those items. This allows an estimate of the normal equations that would have been obtained had all students in the grade been presented with all items that were assigned to that grade. Details of the procedure used to estimate these normal equations based on the sample estimates of the means, variances and covariances appear in the NAEP Technical Report.

Because not all items were presented at Grades 4 and 11, the normal equations for those grades has missing cells, corresponding to the items which were not presented. For Grade 4, there were 2 missing items (N000302 and N000502). The cells of the normal equations corresponding to these

missing items (which includes all sums of crossproducts involving either missing item) were completed in the following manner:

1) It was assumed that, for the population of Grade 4 students, the conditional distribution of the two items given the background characteristics and responses to the 8 items actually assigned to Grade 4 is the same as the equivalent conditional distribution for the population of Grade 8 students, and is multivariate normal.

2) This conditional distribution was estimated for the Grade 8 sample.

3) This estimate was combined with the marginal distribution obtained from the Grade 4 normal equations to obtain an estimate of the joint distribution of all items for the population of Grade 4 students.

Under the assumption in (1) above, this will produce an estimate of the normal equations that would have been obtained had all items (including the missing 2) been presented to each member of the population of Grade 4 students. A similar procedure was used to estimate the full set of normal equations for Grade 11.

These three sets of normal equations were then pooled and used as the basis for the least-squares prediction of a given student's ARM writing proficiency value based on that student's background characteristics and responses to the writing items actually taken.

3. Plausible Values for the ARM Writing Value

The basic predicted value for a given student is, in the above notation,

$$\hat{Y}_i = A_i \hat{\Gamma} = X_i \hat{\beta} \quad .$$

Because of the method of estimation employed, this basic predicted value is an optimal (in a least-squared sense) point estimate of the student's score. Additionally, optimal point estimates of average scores for the various background characteristics included in the background variables in the fit can be obtained by averaging the basic predicted values across the appropriate subgroup.

However, as is the case with the Reading Proficiency Scale values, these optimal point estimates can lead to seriously biased estimates of the characteristics of

populations not addressed by the background variables. Additionally, the variability of any of the estimates (including those for populations addressed by the background variables) will be seriously understated by using the basic predicted values.

The basic predicted scores do not take into account the distribution of potential scores for any individual. The basic predicted value for a student is an estimate of the mean of this distribution and, as such, makes no statement about the set of other values, any one of which might also have been the student's score.

As in the case of reading proficiency, the value of any function of writing proficiency should be obtained by evaluating the expectation of the function across the joint distribution of the parameter estimates and the potential scores for each student. partial computations are provided on the user tapes to facilitate user applications by eliminating the need to evaluate integrals explicitly. The user tapes provide five "plausible values" of writing proficiency for each student. The i^{th} plausible value of a student is the sum of:

1) the basic predicted value for the student; and

2) a random term reflecting the uncertainty of the student's value given the student's background variables and scores on items taken and holding the parameters ($\hat{\beta}$ and $\hat{\Gamma}$) fixed.

These plausible values should be used in the same manner as indicated in Section F.4 above. As in the case of reading proficiency values, statistics involving writing proficiency and background variables <u>not</u> specified above are subject to biases. Further details on the use of plausible values are provided in Chapter V.

H. Calculating Standard Errors (Jackknifing)

NAEP uses a complex, multi-stage sample design. Most statistical analysis programs assume simple random sampling. This assumption, given the NAEP design, would produce standard error estimates that are systematically too small. (Some of the reasons for this are discussed in Chapter V.)

To estimate sampling variability properly, the characteristics of the sample design must be taken into account. One way to obtain a proper estimate of sampling variability is through the jackknife method, a particular version of which is used for NAEP standard error estimation.

The jackknife variance estimation procedure can be applied to variance estimation for both common statistics, such as means or proportion-correct, and more complex statistics, such as regression coefficients.

The jackknife procedure estimates the sampling variability of a statistic t by measuring how much the value of that statistic changes when carefully selected subsets of the data are changed.

An account of the statistical properties of the jackknife method used by ETS appears in the NAEP Technical Report. Additional details on certain properties of estimates of sampling variability can be found in Chapter V of this guide.

This section provides the operational details for the jackknife standard error estimate as it is used for the NAEP data analysis. Two techniques are described below. The first technique, the multi-weight method, was used in the production of the NAEP report, The Writing Report Card: Writing Achievement in American Schools, 1984 (1986). The second technique, the single-weight method, is a somewhat less accurate approximation which is, in some cases, easier to compute. The single-weight method was used in the production of the NAEP reports, The Reading Report Card: Trends in Reading over Four National Assessments 1971-1984 (1985) and NAEP: Writing Trends Across the Decade, 1974-1984 (1986).

The jackknife procedure involves identifying pairs of Primary Sampling Units (PSUs). This pairing takes the sample design into account. In the 1983-84 assessment, where 64 PSUs were selected, pairing results in 32 PSU pairs. Within a pair, each PSU was randomly designated as the first or the second member of the pair.

The jackknife method estimates the sampling variability of any statistic as the sum of components of variability which may be attributed to each of the PSU pairs. The variance attributed to a particular PSU pair is measured by estimating how much the value of the statistic would change if the information embodied in the PSU pair were to be changed.

This estimation is done by the computation of a quantity t_i called a pseudo-replicate, which is associated with the i^{th} PSU pair, and which is a certain estimate of the statistic of interest t. Specifically, the i^{th} pseudo-replicate of the statistic t is created by eliminating the data from the first PSU of the pair, replacing the lost information with that from the second PSU of the pair (so that the second PSU is include twice), and re-estimating the statistic based on this altered set of data.

The jackknife estimate of the variability of the statistic t used by NAEP is

$$\text{Var}(t) = \sum_{i=1}^{32} (t_i - t)^2$$

and the estimated standard error is the square root of this value. Note that there are a variety of alternative jackknife estimates of variance available in addition to the one given here. For a discussion of the properties of these various estimates, see the NAEP Technical Report.

In practical terms, the major expenditure of resources in the computation of a jackknife variance estimate occurs in the construction of the pseudo-replicates. Two methods are presented to construct the pseudo-replicates. The first method, which is the method used by NAEP, is called the multi-weight method. This method is applicable to the estimation of a wide range of statistics, is straightforward in its implementation, and more properly accounts for sources of variability due to nonresponse adjustment and post-stratification. Implementation of this method requires 33 passes through the data.

The second method, the single-weight method, requires only one pass through the data but requires special programming and approximately twice the computer storage space of the multi-weight method. The single-weight method does not account directly for the variability due to post-stratification.

1. The Multi-Weight Method

The multi-weight method can be applied in the estimation of the sampling variability of any statistic which can be expressed as a function $t(\underline{y},\underline{w})$ of sample responses $\underline{y}$ and weights $\underline{w}$. For example, t can be a weighted mean, a weighted proportion, a weighted percentile point or a more complex statistic, such as a weighted regression coefficient (or vector of regression coefficients). The computation of pseudo-replicates of any such statistic by the multi-weight method involves the use of 32 sets of weights, referred to as JKWT01 through JKWT32 on the user tapes. The set of weights JKWTi is identified with the i^{th} PSU pair and is used to compute t_i, the i^{th} pseudo-replicate of the statistic t. The value of this pseudo-replicate is

$$t_i = t(\underline{y},\underline{\text{JKWTi}})$$

which is simply the statistic t recomputed by using the weights JKWTi instead of the sample weights (WEIGHT).

The set of weights for the i^{th} PSU pair, JKWTi, are computed as follows:

1. Let W_j^B be the base weight for student j. The base weight is the full student weight (WEIGHT) without the adjustments for nonresponse and post-stratification.

2. Let

$$W_j^{Bi} = \begin{cases} 0 & \text{if student j is in the first PSU of PSU pair i;} \\ 2W_j^B & \text{if student j is in the second PSU of PSU pair i; and} \\ W_j^B & \text{if student j is not in either PSU of PSU pair i.} \end{cases}$$

   This set of pseudo-replicate base weights effects the elimination of the first PSU of the pair and replaces it in the sample with the second PSU of the pair.

3. Adjust the set pseudo-replicate base weights produced by Step 2 for nonresponse and post-stratification by treating them as if they were base weights for the sample. These adjustments take into account the grade/age of the student and the mode of administration.

Because JKWTi is the set of pseudo-replicate base weights after adjustment for nonresponse and post-stratification, the effects of those adjustments on the value of the statistic t are approximately accounted for in the estimate of the variance of t attributed to the i^{th} PSU pair.

From the user's standpoint, it is straightforward to obtain the jackknife variance of any statistic by the multi-weight method. Furthermore, no special programming is required to compute the pseudo-values regardless of the statistic. All that is required is 33 passes through the data: the first pass to compute the overall statistic t using the student weight (WEIGHT) and 32 passes to compute the pseudo-replicates t_i using the jackknife weight (JKWTi). By appropriately accumulating intermediate results for each of the 33 weights, it is possible to compute the necessary statistics in one pass through the data. However, separate computations for each weight and some special programming are still required.

As an example, details for the computation of the jackknife variance of a weighted mean follow (SPSS-X and SAS

code for this purpose are contained in Table VI.10 of Chapter VI.)

Let Z_k be the value of some measurement of interest for student k and let W_k be that student's full-student weight (WEIGHT). The statistic of interest is the weighted mean value of Z:

$$t = \sum_{k=1}^{n} W_k Z_k / \sum_{k=1}^{n} W_k \quad .$$

Note that if Z_k can only take the values 0 or 1, then t is the weighted proportion receiving a value of 1.

Let W_k^i = value of JKWTi for student k. The pseudo-replicate for the i^{th} PSU pair is

$$t = \sum_{k=1}^{n} W_k^i Z_k / \sum_{k=1}^{n} W_k^i \quad .$$

The jackknife variance of the weighted mean is

$$\widehat{Var}(t) = \sum_{i=1}^{32} (t_i - t)^2 \quad ,$$

and the jackknife standard error of the mean is the square root of $\widehat{Var}(t)$.

2. The Single-Weight Method

The multi-weight method requirement of 33 separate sets of computations makes it a computationally expensive procedure. An alternative jackknife method, the single-weight method, requires only one pass through the data, decreasing costs through fewer computations. However, the single-weight method requires special programming for each general statistic and about two times the computer memory required for the multi-weight method. Furthermore, this method does not directly account for variability attributable to post-stratification adjustments.

In the single-weight method, a student's pseudo-replicate weight is the same for all pseudo-replicates except the pseudo-replicate corresponding to the PSU pair containing the student. This frequently allows the pseudo-replicates and overall estimate to be expressed as functions of various PSU

level totals, where these totals can be accumulated in a single pass through the data.

Specifically, let

W_{ijk} = full-student weight (WEIGHT) for the k^{th} student of the j^{th} PSU of the i^{th} PSU pair.

The pseudo-replicate weight for this student corresponding to the h^{th} PSU pair is

$$W^{h}_{ijk} = \begin{cases} W_{ijk} & h \neq i; \\ 0 & h = i,\ j = 1; \\ 2W_{ijk} & h = i,\ j = 2. \end{cases}$$

That is, the student's pseudo-replicate weights, for all PSU pairs but the pair that contains the student, are identically equal to the full-student weight. For the PSU pair containing the student, the student's pseudo-replicate weight is either 0 or twice his or her full-student weight depending on which PSU of the pair contains the student.

These pseudo-replicate weights (which are different from the JKWTi) allow the pseudo-replicates of a weighted mean to be expressed as ratios of sums and differences of PSU totals. (SPSS-X and SAS code for this case are contained in Table VI.12 of Chapter VI.)

Let Z_{ijk} be the student's value of interest. Define

$$W_{ij+} = \sum_{k=1}^{nij} W_{ijk}$$

and

$$X_{ij+} = \sum_{k=1}^{nij} W_{ijk} Z_{ijk} \quad ,$$

where nij is the number of students in the j^{th} PSU of the i^{th} PSU pair.

The overall mean and all pseudo-values can be obtained from these 64 PSU totals.

Let

$$W_{+++} = \sum_i \sum_j W_{ij+}$$

and

$$X_{+++} = \sum_i \sum_j X_{ij+} \quad .$$

The overall mean is $t = X_{+++}/W_{+++}$. The i^{th} pseudo-replicate is

$$t_i^* = \frac{(X_{+++} - X_{i1+} + X_{i2+})}{(W_{+++} - W_{i1+} + W_{i2+})} \quad .$$

The single-weight variance estimate is

$$\text{Var}^*(t) = \sum_{i=1}^{32} (t_i^* - t)^2$$

Notes:

(1) The single-weight variance Var*(t) is not equal to the multi-weight variance Vâr(t), although they generally will be close.

(2) The formulas for the single-weight pseudo-replicates of any other type of statistic must be determined on a case-by-case basis.

I. Reporting Subgroups

NAEP reports performance results for groups of students rather than for individual students. In addition to reporting national results, NAEP reports information about student subgroups defined by sex, race/ethnicity (both observed and imputed), region of the country, grade/age, level of parent's education, and size and type of community.

Some subgroup data were not obtained directly from assessment responses, but were derived through procedures described in Sections 3, 6 and 7 below.

Subgroup data are contained under the variable names listed in Table IV.5.

Table IV.5
NAEP 1983-84
Reporting Subgroup Variables

Subgroup	Variable Name	
	Student File	School File
Sex	SEX	-
Observed Race/Ethnicity	RACE	-
Imputed Race/Ethnicity	ETHNIC*	-
Region	REGION	SREGION
Age	STUDAGE*	-
Grade	NEWGRD	-
Size & Type of Community	STOC	SSTOC
Parent's Education	PARED*	-

* Denotes derived variable

The reporting subgroups were determined as follows:

1. Sex

Responses were reported for male and female students.

2. Observed Race/Ethnicity

This is the observed race/ethnicity of the student being assessed. The observed definition of student race/ethnicity was the only one used in NAEP assessments prior to 1983-84. This variable should be used for race/ethnicity subgroup comparisons to previous assessments.

3. Imputed Race/Ethnicity

This is an imputed definition of race/ethnicity, derived from several sources of information. This variable can be used for race/ethnicity subgroup comparisons within the 1983-84 assessment.

Three common background items were used to determine race/ethnicity for students who participated in the 1983-84 assessment session. The items were included in every Spiral assessment booklet and in each Paced Tape booklet, as follows:

Common Background Item Number 2:

2. Are you Hispanic?
   A. No
   B. Yes, Mexican, Mexican American, or Chicano
   C. Yes, Puerto Rican
   D. Yes, Cuban
   E. Yes, Other Spanish/Hispanic
      (What?) _____

Students who responded to item number 2 by circling B, C, D, or E were considered Hispanic. For students who circled A, did not respond to the item, or provided information which was illegible or which could not be classified, responses to item number 1 were examined in an effort to determine race/ethnicity. Item number 1 read as follows:

Common Background Item Number 1:

1. Are you:
   A. American Indian or Alaskan Native
   B. Asian or Pacific Islander
   C. Black
   D. White
   E. Other (What?) _____

Students who circled A were considered American Indian; B were considered Asian; C were considered Black; and D were considered White. If a student responded by circling E, race/ethnicity was determined in accordance with the information filled in by the student as "Other (What?)."

For students who did not respond to item number 1, or who did so by providing illegible information or information which could not be classified, responses to item number 4 were examined in an effort to determine race/ethnicity. Item number 4 read as follows:

Common Background Item Number 4:

4. What language do most people in your home speak?
   A. English
   B. Spanish
   C. Another language
      (What is it?) _____

A student was considered Hispanic if he or she circled B. For a student who circled C and indicated that most people in the home spoke languages which were not English or Spanish/Hispanic, race/ethnicity was determined by classifying the language specified by the student.

For a student who did not respond to common background items 1, 2 or 4 above, observed race/ethnicity, if provided by the exercise administrator, was used.

Race/ethnicity could not be classified for a student who did not respond to background items 1, 2 or 4, and for whom an observed race/ethnicity was not provided.

The races and ethnicities which were provided by students in response to items 1, 2 and 4 above are listed in Table IV.6. Slashes indicate variations in the way races and ethnicities were spelled by students.

Table IV.7 summarizes the procedure used to determine race/ethnicity.

4. Size and Type of Community

NAEP assigned each participating school to one of seven Size and Type of Community (STOC) categories. The categories were designed to provide information about the communities in which the schools were located.

The STOC reporting categories consist of three "extreme" types of communities and four "residual" community sizes. Schools were placed into STOC categories based upon information about the type of community, the size of its population and upon an occupational profile of residents provided by school principals. The principals completed estimates of the percentage of students whose parents fit into each of six occupational categories.

Schools in extreme rural and low or high metropolitan areas were ranked in descending order according to the occupational profile, the type of community, and the size of its population. The top 10 percent of these schools were assigned to the extreme STOC categories (1, 2 and 3) below. The remaining schools were classified according to one of the four residual STOC categories. The three extreme STOC categories are as follows:

STOC 1 - Extreme Rural:

This category was used for schools in rural areas where a high proportion of adults were farmers or farm workers and a low proportion of professional, managerial, or factory workers. At least some of the students in these schools were from open country or places with a population of less than 10,000.

STOC 2 - Low Metro:

The low metro STOC category was used for schools in areas where a high proportion of the adult population was either not regularly employed or on welfare and a low proportion was employed in professional or managerial positions. The schools

Table IV.6

Race/Ethnicity Classifications

American Indian:	Asian:
American Indian	Amerasian/Amasian
Cherokee	Americanphillippine
Indianamerican/ Indiamerican	Asian
Nativeam	Assirian
Navahoe	Cambodian
Sueinda	Chinese
Black:	Eastindi
Afroamerican	Eurasian
Black	Filippine/Fillippine/ Filappine/ Phillipine
Blackamerican	Fr India
Hispanic:	Guamania
Chicano	India
Columbian	Indianasian
Dominican	Indonesian
Hispanic	Japanese
Latin	Japanese-American
Mexican	Korean
Puerto Rican	Lasos/Leocean/Laotion/ Loas
Salvadorian	Oriental
Spanish	Pacific
	Pakistan
	Taiwanes/Taowames
	Thai/Thia
	Vietnamese/Veitnamese
White:	**Unclassified:**
Appropriate races/ethnicities were classified as White. Races/ethnicities which could not be considered American Indian, Asian, Black, Hispanic or White were included as unclassified.	

Table IV.7
NAEP 1983-84: Determining Race/Ethnicity

Background Item Number 2
2. Are you Hispanic?
A. No
B. Yes, Mexican, Mexican American or Chicano
C. Yes, Puerto Rican
D. Yes, Cuban
E. Yes, Other Spanish/Hispanic
Student circled B, C, D or E
Student was Hispanic
(What?) _____
Student circled A, did not respond, provided either an illegible response or a response which could not be classified
Background Item Number 1
1. Are you:
A. American Indian or Alaskan Native
B. Asian or Pacific Islander
C. Black
D. White
Student circled A, B, C or D
Student was: A. American Indian, B. Asian, C. Black, or D. White
Student did not circle A,B,C or D; provided either an illegible response or a response which could not be classified
Background Item Number 1
E. Other (What?) _____
Student filled-in another Race/Ethnicity
Student was: American Indian, Asian, Black, White; or Hispanic
Student did not circle E, provided either an illegible response or a response which could not be classified
Background Item Number 4
4. What language do most people in your home speak?
A. English
B. Spanish
C. Another language
(What is it?) _____
Student circled B or circled C and filled-in a language
Student was: B. Hispanic, C. American Indian, Asian, Hispanic, Black, or White
Student circled A, did not respond, provided either an illegible response or a response which could not be classified
Observed Race/Ethnicity
Provided by Exercise Administrator
Student was: American Indian, Asian, Black, Hispanic, or White
Observed Race/Ethnicity was not provided by Exercise Administrator
Unclassified Race/Ethnicity

in STOC 2 were located in cities, or the urbanized area of cities, with a population greater than 200,000.

STOC 3 - High Metro:

High metro schools were located in city areas where a high proportion of adults was employed in professional or managerial positions and a low proportion factory or farm workers, not regularly employed, or on welfare. STOC 3 schools were located in cities or the urbanized area of cities with populations greater than 200,000.

Schools which did not fall into STOC 1, 2 or 3 were classified according to four "residual" STOC categories depending upon the size of the community in which they were located. The four residual STOC reporting categories are as follows:

STOC 4 - Main Big City:

STOC 4 schools were located within the limits of cities with populations greater than 200,000 but not classified as High or Low Metro.

STOC 5 - Urban Fringe:

The schools assigned to STOC 5 were located in the urbanized area, but outside the limits, of cities with populations over 200,000, but not classified as Low or High Metro.

STOC 6 - Medium City:

STOC 6 schools were located in cities with populations of between 25,000 and 200,000 which did not classify as fringe areas for big cities.

STOC 7 - Small Place:

The schools assigned to STOC 7 were located in communities with populations of less than 25,000. These communities were not located in the urbanized areas of big cities and could not be classified as Extreme Rural.

5. Region

In addition to overall responses, NAEP computed data for four geographical regions in the United States. Table IV.8 outlines the assignment of individual states to each region.

Table IV.8
Geographic Regions

NORTHEAST:		SOUTHEAST:	
Connecticut	New Hampshire	Alabama	Mississippi
Delaware	New Jersey	Arkansas	North Carolina
District of Columbia	New York	Florida	South Carolina
Maine	Pennsylvania	Georgia	Tennessee
Maryland	Rhode Island	Kentucky	Virginia
Massachusetts	Vermont	Louisiana	West Virginia
CENTRAL:		**WEST:**	
Illinois	Missouri	Alaska	New Mexico
Indiana	Nebraska	Arizona	Oklahoma
Iowa	North Dakota	California	Oregon
Kansas	Ohio	Colorado	Texas
Michigan	South Dakota	Hawaii	Utah
Minnesota	Wisconsin	Idaho	Washington
		Montana	Wyoming
		Nevada	

6. Parental Education

Students were asked to indicate the extent of their father's education in one of the following ways:

1) He did not finish high school;
2) He graduated from high school;
3) He went to another school after graduating high school;
4) He graduated from college; or
5) I Don't Know.

Students were asked to provide the same information about the extent of their mother's education by checking one of the following:

1) She did not finish high school;
2) She graduated from high school;
3) She went to another school after graduating high school;
4) She graduated from college; or
5) I Don't Know.

The information was combined into one parental education reporting category, as follows:

If a student indicated the extent of education for either parent, the higher of the two levels was included in the data. If a student indicated that he or she did not know the level of education for both parents or indicated that he or she did

not know the level of education for one parent and did not respond for the other, the parental education level was classified as unknown. If the student did not respond for either parent, the student was recorded as providing no response.

7. Grade/Age

In an effort to enhance the utility of assessment data, NAEP began sampling students by grade as well as age during the 1983-84 assessment. As a result, 1983-84 data reflect the following grade/age classifications:

Grade 4/Age 9 Students:

For the Grade 4/Age 9 sample, age was computed as of December 31, 1983. The sample includes many students who were both in grade 4 and age 9. However, because NAEP collected data by grade or age during the 1983-84 assessment, the Grade 4/Age 9 sample also includes students who were age 9 (born in 1974) but not in grade 4, students who were in grade 4 but age 8 or younger (born in or after 1975), and students who were in grade 4 but age 10 or older (born in or before 1973).

Grade 8/Age 13 Students:

For the Grade 8/Age 13 sample, age was computed as of December 31, 1983. The sample includes many students who were both in grade 8 and age 13. However, because NAEP collected data by grade or age during the 1983-84 assessment, the Grade 8/Age 13 sample also includes students who were age 13 (born in 1970) but not in grade 8, students who were in grade 8 but age 12 or younger (born in or after 1971), and students who were in grade 8 but age 14 or older (born in or before 1969).

Grade 11/Age 17 Students:

For the Grade 11/Age 17 sample, age was computed as of September 30, 1984. The sample includes many students who were both in grade 11 and age 17. However, because NAEP collected data by grade or age during the 1983-84 assessment, the Grade 11/Age 17 sample also includes students who were age 17 (born between October 1, 1966 and September 30, 1967) but not in grade 11, students who were in grade 11 but age 16 or younger (born after September 30, 1967), and students who were in grade 11 but age 18 or older (born before October 1966).

J. QED Data

The Version 3.1 Public-Use Data Tapes contain several variables obtained from information supplied by Quality Education Data, Inc. (QED). These data, last revised by QED in March 1983, have been used for the following variables:

Student Data Files

ORSHPT	IDP	SPECED
NTEACHC	CAI	LIB/MED
SCHTYPE	URBAN	INDARTS
GRSPAN	NSTUDA	ADULTED
ENROLL	NTEACHA	PCENROL

School Questionnaire Files

SORSHPT	SIDP	SSPECED
SNTCHC	SCAI	SLIBMED
SSCHTYP	SURBAN	SINDART
SGRSPAN	SNSTUD	SPCENRL
SENROLL	SNTEACH	

With the exception of (S)ORSHPT, each variable is briefly defined in the data codebooks. The variables ORSHPT and SORSHPT are the Orshansky Percentile, an indicator of relative wealth which specifies the percentage of district school-age children who fall below the poverty line.

K. NAEP Reports

1983-84 assessment data were used in the production of the following NAEP reports (complete bibliographic references are included in Chapter VII):

The Reading Report Card: Trends in Reading over Four National Assessments 1971-1984 (1985);

The Writing Report Card: Writing Achievement in American Schools, 1984 (Applebee, Langer and Mullis, 1986a); and

Writing: Trends Across the Decade, 1974-1984 (Applebee, Langer and Mullis, 1986b).

For each of these reports, Table IV.9 provides information regarding the type of data used (Spiral, Paced, Grade, Age), the use of plausible values, and whether or not all relevant assessment data is contained on the 1983-84 Public-Use Data Tapes.

Table IV.9
NAEP Report Characteristics

Abbreviated Report Title	Data Types Used		Plausible Values Used?	Relevant Data on 1983-84 User Tapes?
	Spiral/Paced	Grade/Age		
"The Reading Report Card..."	Spiral Paced	Age Age	Yes	No*
"NAEP: Writing Trends..."	Paced	Age	No	No*
"The Writing Report Card..."	Spiral	Grade	Yes	Yes

* Report includes data from previous assessments.

V. Issues to Consider in Conducting Statistical Analyses Using 1983-84 NAEP Data

V. Issues to Consider in Conducting Statistical Analyses Using 1983-84 NAEP Data

A. Introduction

Potential users of NAEP data should be aware of the special properties of the NAEP database that affect the validity of conventional techniques of statistical inference. There are two reasons that standard procedures for statistical inference should not be applied to the NAEP data without modification. First, a complex sampling scheme, rather than simple random sampling, was used to collect NAEP data. Second, because of the specialized methods used to estimate reading and writing proficiencies in NAEP, the resulting proficiency values have different properties from ordinary test scores.

These issues are outlined below and discussed in detail in the following sections. Section B describes the procedures used in NAEP to account for the special properties of the NAEP data. Section C provides approximate procedures that are easier to implement and less expensive. Although the approximate procedures are less precise, it is expected that the resulting degree of accuracy will be acceptable to most users of the NAEP data.

1. Properties of NAEP Data that Result from Complex Sampling

In the NAEP sampling scheme, students do not have an equal probability of being selected. Therefore, as in all complex surveys, each student has been assigned a sampling weight. The larger the probability of selection for students within a particular demographic group, the smaller the weights for those students will be. When computing descriptive statistics or conducting inferential procedures, one should weight the data for each student. Performance of statistical analyses without weights can lead to misleading results.

Another way in which the complex sample design used by NAEP differs from simple random sampling is that the NAEP sampling scheme involves the selection of clusters of students who come from the same school, as well as clusters of schools that come from the same geographical region. As a result, observations are not independent of one another as they are in a simple random sample. Therefore, use of ordinary formulas for estimating the standard error of sample statistics, such as means, proportions or regression coefficients, will result in values that are too small. The standard error, which is a measure of the variability of a sample statistic, gives an indication of how well that statistic estimates the corresponding population value. It is used in conducting tests of statistical significance. If conventional simple random sampling (SRS) formulas are used to compute standard errors, "too many" statistically significant results will occur.

Yet another effect of the NAEP sampling scheme is a reduction of the effective degrees of freedom. In a simple random sample, the degrees of freedom of a variance estimate are based on the number of subjects. In the NAEP design, the degrees of freedom are a function of the number of Primary Sampling Units (PSUs) and the number of strata in the design, rather than the number of subjects (see Chapter III for a discussion of the sample design). Therefore, the ordinary formulas for obtaining degrees of freedom are not valid with the NAEP data.

2. Properties of NAEP Data that Result from Proficiency Estimation Procedures

In conventional applications of item response theory (IRT) scaling, the number of items administered to each respondent is sufficient to obtain a precise estimate of each individual's proficiency. In NAEP, however, the goal is to estimate group means, rather than individual proficiency values. Some respondents may answer only a few questions. Procedures described in detail below are used to estimate a distribution of plausible values for each respondent and to draw values at random from this distribution. The resulting values are appropriate for calculating statistics based on certain groups, but do not represent precise estimates of proficiency for individual respondents.

Use of this method of estimating proficiency results in an increase in the variability of statistics such as means and regression coefficients. Thus, there are two reasons that the standard errors of these statistics are larger than the values that would be obtained with conventional formulas: the use of cluster sampling, which results in non-independent observations; and the use of proficiency estimation methodology that provides consistent estimates of selected group characteristics, but does not yield precise estimates for individual respondents. Another property of the proficiency estimates based on plausible values is that for some subgroups of respondents, mean proficiencies may be biased. This is explained in Section 2 below.

B. Procedures Used by NAEP to Estimate Variability

This section describes how the magnitude of variability from the sources described above was estimated in the NAEP reports, The Reading Report Card and The Writing Report Card. This estimate represents the most precise estimate obtainable, given the resources available to NAEP. Better estimators of uncertainty could be obtained with more resources. Because most secondary users will have fewer resources than those available for the NAEP reports, Section C provides less expensive approximations to the estimators described below.

1. Estimation of Uncertainty Due to Sampling

A major source of uncertainty in the estimation of the value in the population of a variable of interest exists because information about the variable is obtained only on a sample from the population. To reflect this fact, it is important to attach to any statistic (e.g., a mean) an estimate of the sampling variability to be expected for that statistic. (The estimation of variability due to imperfect measurement, discussed in the following section, is also essential.)

Estimates of sampling variability are designed to provide information about how much the value of a given statistic would be likely to change if the statistic had been based on another, equivalent, sample of individuals drawn in exactly the same manner as the achieved sample. Consequently, the estimation of the sampling variability of any statistic must take into account the design of the sample.

The NAEP sample is obtained via a stratified multi-stage probability sampling design which includes provisions for sampling certain subpopulations at higher rates. Additional characteristics of the sample include adjustments for both nonresponse and post-stratification. The resulting sample has different statistical characteristics from those of a simple random sample. In particular, because of the effects of cluster selection (students within schools, schools within PSUs) and because of effects of nonresponse and post-stratification adjustments, observations made on different students cannot be assumed to be independent of each other (and are, in fact, generally positively correlated). Furthermore, to account for the differential probabilities of selection (and the various adjustments), each student has an associated sampling weight, which must be used in the computation of any statistic and which is itself subject to sampling variability.

Treatment of the data as a simple random sample, with disregard for the special characteristics of the NAEP sample design, will produce underestimates of the true sampling variability.

There are a number of techniques available to obtain a proper estimate of sampling variability. The technique used for the NAEP reports, the jackknife method, is described in Chapter IV, Section H. The ETS jackknife technique assesses the sampling variables of any statistic as the sum of variability attributable to each of 32 pairs of PSUs. The variance attributable to a particular PSU pair measures how much the value of the statistic would change were the information in that PSU pair to change. A key property of this estimator of variance is that is accounts for both within-PSU sources of variability and between-PSU variability.

It also accounts for stratification and the consequences of nonresponse adjustments and, for the multi-weight version, post-stratification adjustments. Chapter IV, Section H presents details concerning the single-weight and multi-weight jackknife procedures. A brief review of the (preferred) multi-weight procedure follows.

The component of the sampling variability attributable to a PSU pair is estimated as the squared difference between the value of the statistic for the complete sample and a pseudo-replicate formed by recomputing the statistic on a specially-constructed pseudo-dataset. This pseudo-dataset is created from the original dataset by eliminating the first PSU of the pair and replacing it with a copy of the second PSU in the pair. For computational purposes, the pseudo-dataset associated with a given PSU pair is the original dataset with a different set of weights, referred to as JKWT01 through JKWT32 on the data tapes, where JKWTi is for the i^{th} PSU pair. This set of weights allows measurement of the total effect of replacing the first PSU of the PSU pair with a copy of the second, including adjustments for nonresponse and post-stratification. The pseudo-replicate associated with the i^{th} PSU pair for a given statistic is obtained by recalculating the statistic using the weights JKWTi instead of the sampling weights.

Specifically, let $t(\underline{y},\underline{w})$ be any statistic which is a function of the sample responses $\underline{y}$ and the weights $\underline{w}$ and which estimates population value T. For example, t could be a weighted mean, a weighted percent-correct point or a weighted regression coefficient. The $t(\underline{y},\underline{w})$, computed with the sampling weights (WEIGHT on the data tapes) is the appropriate sample estimate of T. To compute $\hat{Var}(t)$, the sampling variance for this statistic, proceed in the following manner:

1. For each of the 32 PSU pairs compute the associated pseudo-replicate for the statistic. For the i^{th} pair, this is

   $$t_i = t(\underline{y},\underline{JKWTi})$$

   which is the statistic t recalculated by using JKWTi instead of the sampling weights.

2. The sample variance of t is

   $$\hat{Var}(t) = \sum_{i=1}^{32} (t_i - t)^2 \quad .$$

This estimation technique is called the multi-weight jackknife approach. Table VI.10 provides SPSS-X and SAS code

for carrying out the above in the special case of a weighted mean.

a. Degrees of Freedom of the Jackknifed Variance Estimate

Note that the jackknife procedure estimate the sampling variability of the statistic by assessing the effect of change in the sample at the paired PSU level. For this reason, the number of degrees of freedom of the variance estimate $\hat{Var}(t)$ will be at most equal to the number of PSU pairs. The number of degrees of freedom, which indicates the variability of the variance estimate, equals the number of independent pieces of information used to generate the variance. In the current case, the pieces of information are the 32 squared differences $(t_i - t)^2$, each supplying at most one degree of freedom (regardless of how many individuals were sampled within any PSU).

Increasing the number of individuals sampled within any PSU results in a lower estimate of sampling variability because the within-PSU component is reduced. This, however, does not improve the estimation of the between-PSU component of variability, which depends on the number of PSUs selected.

The number of degrees of freedom of the sample variance estimator can be less than the number of PSU pairs (32) when a few of the squared differences $(t_i - t)^2$ are markedly different in magnitude than the remainder. An extreme case of this is when one or more of the t_i are identical to t, so that $(t_i - t)^2 = 0$. This may happen, for example, when the statistic t is a mean for a subgroup and no members of that subgroup come from the PSU pair i. Such a PSU pair contributes zero degrees of freedom to the variance.

An estimate of the effective number of degrees of freedom for $\hat{Var}(t)$ comes from an approximation due to Satterthwaite (1946) (See Cochran (1977), p. 96 for a discussion).

The effective number of degrees of freedom using this approximation is

$$df_{eff} = \frac{\left(\sum_{i=1}^{32} (t_i - t)^2\right)^2}{\sum_{i=1}^{32} (t_i - t)^4}$$

which is never larger than 32.

2. Proficiency Values

Jackknifing provides a reasonable estimate of uncertainty due to sampling from a finite population when the variable of interest is observed without error from every respondent. As noted in Section F of Chapter IV, however, some of the key reporting variables in NAEP are not observed without error. Although both reading proficiency and writing proficiency are construed to characterize individual respondents, these proficiencies are not observed directly from any respondent. They are instead inferred imperfectly from responses to a few reading or writing exercises.

Each respondent provides answers to too few cognitive exercises to provide an accurate point estimate of his or her ability. However, as described in Chapter IV, Section F, it is possible to summarize what is known about the proficiency value θ of respondent i given his or her responses to cognitive exercises (x_i) and background variables (y_i) in terms of a probability distribution $p(\theta|x_i,y_i)$. For computational convenience, these distributions have been approximated by a set of five "plausible values", $\tilde{\theta}_1$ through $\tilde{\theta}_5$, drawn at random from $p(\theta|x_i,y_i)$. They are labeled RDVAL1 through RDVAL5 and WRTVAL1 through WRTVAL5 on the data tapes. The spread of these plausible values reflects the uncertainty about the θ value associated with that respondent given the observable variables x and y. The background variables y used in constructing these plausible values are age, grade, region of the country, parental education, sex, ethnicity, and size and type of community.

Let $t(\theta,y)$ be a statistic, or a function of the values of θ and y in the sample, estimating a population value T. Examples of statistics t would be weighted means, percentile points, and regression coefficients. If θ were observed directly for sampled pupils, it would be possible to approximate the precision of t through standard methods for survey samples, such as the jackknife technique described above; the result would be, say, $\hat{Var}(t)$. This value addresses

uncertainty due to sampling only. Using plausible values, the additional uncertainty incurred when θ is not observed directly can be managed in the following manner:

1. Using the first vector of plausible values for each respondent (i.e., RDVAL1), evaluate t as if the plausible values were the true values of θ. Denote the result $\hat{t}_1$.
2. Using the multiple weight jackknife approach, compute the estimated sampling variance of $\hat{t}_1$, or $\hat{Var}(\hat{t}_1)$, with respect to respondents' first vectors of plausible values.
3. Carry out steps (1) and (2) for the second through fifth vectors of plausible values, thus obtaining $\hat{t}_u$ and $\hat{Var}(\hat{t}_u)$ for $u = 2,\ldots,5$.
4. The best estimate of t obtainable from the plausible values is the average of the five values obtained from the different sets of plausible values:

$$\hat{t}. = \sum_u \hat{t}_u/5 \quad .$$

5. An estimate of the variance of $\hat{t}.$ is the sum of two components:

$$\hat{Var}(\hat{t}.) = \sum_u \hat{Var}(\hat{t}_u)/5 + \sum_u (\hat{t}_u - \hat{t}.)^2/5 \quad .$$

The first component in $\hat{Var}(\hat{t}.)$ reflects uncertainty due to sampling respondents from the population; the second component reflects uncertainty due to the fact that sampled respondents' θs are not known precisely, but only indirectly through x_i and y_i.

The first component in $\hat{Var}(\hat{t}.)$ is attainable by jackknife methods for means as described in the preceding section. Table VI.11 provides SPSS-X and SAS code to apply the steps given above in this special case. In principle, jackknifing could also be applied to more complicated statistics such as regression coefficients.

Computations in this manner of statistics t, involving only writing or reading proficiency, in conjunction with the specific background variables y listed above, provides nearly unbiased estimates of the population values T. Statistics involving proficiency and background variables <u>not</u> included in

this list are subject to biases, the magnitude of which depend in part on the relationship of the excluded background variables to the included background variables. (See the NAEP Technical Report for details.)

C. Approximations

Estimating variability requires computing a statistic 165 times, including 33 runs to obtain an estimate and a variance estimate from each of the 5 sets of plausible values. Because the cost of the full procedure may be prohibitive in many studies, approximate procedures to produce reasonable estimates at lower costs are provided below.

1. Design Effects

The major computational load in computing uncertainty measures for any statistic exists in the computation of the uncertainty due to sampling variability. As mentioned above, the procedure detailed in Section B.1 requires that the statistic be recomputed 33 times to obtain an estimate of the sampling variance of the statistic. If the population value of interest is based on proficiency values, so that the statistic is computed on a set of plausible values, the entire process must be repeated 5 times, once for each set of plausible values.

This section describes how to approximate the sampling variability for a statistic based on a single set of plausible values. Section C.2 provides way of reducing the number of computations in the case of estimation with sets of plausible values.

As indicated in Section B.1, it is inappropriate to estimate the sampling variability of any statistic based on the NAEP database by using simple random sampling (SRS) formulas. These formulas, which are the ones used by most standard statistical software such as SPSS and SAS, will produce variance estimates which are generally much smaller than is warranted by the sample design.

It may be possible to account approximately for the effects of the sample design by using an inflation factor, the design effect, developed by Kish (1967) and extended by Kish and Frankel (1974). The design effect for a statistic is the ratio of the actual variance of the statistic (taking the sample design into account) over the conventional variance estimate based on the same number of elements. To avoid sources of bias due to improper representation, this conventional estimate must use the sampling weights. The design effect may be used to adjust error estimates based on simple random sampling assumptions to account approximately for the effect of the design. In practice, this is often accomplished by dividing the total sample size by the design effect and using this effective sample size in the computation

of errors. Note that the value of the design effect depends on the type of statistic computed and the variables considered in a particular analysis as well as the clustering effects occurring among sampled elements.

Based on empirical results and theoretic considerations, Kish and Frankel (1974) have developed several conjectures about design effects:

1. Generally, the design effects for complex statistics from complex samples are greater than 1, causing variances based on simple random sampling assumptions to tend to be underestimates.

2. The design effects for complex statistics (such as regression coefficients) tend to be smaller than the corresponding design effects for means of the same variables. Hence, these latter estimates, which are more easily computed, tend to give overestimates of the design effects of complex statistics.

3. The design effects of complex statistics tend to resemble those of means; variables with a high design effect of the mean also tend to have high design effects for complex statistics involving those variables.

To incorporate the design effect idea in a statistical analysis, proceed in the following manner:

1. For a given class of statistics (e.g., means, percentile points, regression coefficients), compute the jackknife variance as in Section B.1 for a number of cases. The cases should cover the range of situations for which the approximation is to be used. If various subpopulations are to be considered, it is important to have information on the relative variability within each subgroup. This is especially important if certain subgroups are more highly clustered in the sample.

2. For the identical cases, compute the conventional estimate of the variance. This estimate must take the sample weights into account to avoid problems of bias due to improper representation. To account properly for the difference between the number of individuals being sampled and the total of the sampling weights, the weights should be scaled so that their sum equals the sample size.

3. For each case, compute the design effect where the design effect for case j is

$$deff_j = Var_{JK}(t_j)/Var_{CON}(t_j) \quad ,$$

the ratio of the jackknife variance estimate of the statistic to its conventional variance estimate.

4. If the design effects for the various cases are tolerably similar, choose an overall composite design effect. If the design effects for certain subgroups appear to cluster around a markedly different value from the remaining cases, treat those subgroups separately.

5. In the case that a consistent overall design effect has been found:

   (1) rescale the weight of each individual so that the sum of the scaled weights is equal to the effective sample size

$$N_{eff} = \frac{\text{sample size}}{\text{design effect}}$$

   (2) conduct a traditional weighted analysis using these scaled weights

6. The degrees of freedom for any variance estimates obtained by using this approach is still at best 32, the number of PSU pairs, as it was for the jackknife. Accordingly, tests of significance produced by standard programs (which will use the effective sample size minus the number of parameters for error degrees of freedom) should be interpreted with extreme caution because they are likely to be too liberal. Significance and inferential procedures are properly based on the smaller error degrees of freedom (32).

2. Multiple Runs with Different Imputes

A second method of reducing costs is to use fewer runs on plausible value sets. A statistic computed from a single set of plausible values has the same expectation as the average of the five, but does not take into account the uncertainty surrounding θ values. Use of at least two, but less than five, sets of plausible values to evaluate a statistic will properly account for this uncertainty and will reduce costs at the same time. The occurrences of "5" in the procedure outlined above would be replaced by a "2", "3", or "4" as

appropriate. The resulting decrease in computation is accompanied by a decrease in precision for estimating $\hat{Var}(t_{\cdot})$.

Note: It is not appropriate to average the five plausible values associated with each respondent and analyze those averages. The result of this computation is not generally equal to the correct value.

3. Implementing the Full Procedure

Full implementation of the procedure employed by NAEP requires 165 computations of a statistic. Employing the suggestions described above reduces computation considerably. If design effects are used to account for variation due to sampling (Step 2 of the procedure outlined above), no more than 5 calculations need be performed. In any event, at least two calculations should be performed to account for uncertainty due to θ and uncertainty due to sampling variance.

D. A Note Concerning Multiple Comparisons

In performing multiple hypothesis tests it is important to consider the fact that if J tests are performed, each with a Type I error rate (the probability of rejecting the null hypothesis when the null hypothesis is true) of α, the Type I error rate for the entire set of contrasts could be as high as $J\alpha$. Therefore, it is desirable to use a multiple comparison procedure to control the overall error rate for the entire set of hypothesis tests. In the present case, it is advantageous to use a procedure that allows control of the error rate for sets of varying size that may include both pairwise and complex comparisons. (An example of a complex contrast is a comparison of one group to the average of two other groups.) The Dunn-Bonferroni approach is, therefore, a good choice. To apply this method in its simplest form, we need only decide at what level we wish to control the setwise error rate (α_s) and then set the Type I error rate for each comparison equal to $\alpha_c = \alpha_s/J$, where J is the number of comparisons.

For example, suppose we wanted to perform three pairwise comparisons between regional groups, as well as one complex comparison, controlling α_s at .05. The Type I error rate for each comparison should be set at $\alpha_c = \alpha_s/J = .05/4 = .0125$. The required critical value can be obtained from a table of the Bonferroni t-statistic (Miller, 1981, p. 238) with the appropriate degrees of freedom.

E. References Cited in Chapter V

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VI. 1983-84 Public-Use Data Tapes: Contents and Format

VI. The 1983-84 Public-Use Data Tapes: Contents and Format

A. Introduction

This chapter provides detailed information concerning the contents and format of each data file on the Public-Use Data Tapes and of the printed layouts and codebooks produced for the 1983-84 assessment. In reviewing the material below, readers may want to refer back to the detailed information concerning reading proficiency, writing proficiency and standard errors contained in Chapter IV.

B. Raw Data Files

The raw data files contain one record per student, excluded student, teacher, and school. All raw data files are rectangular, so that record lengths are fixed and a given variable always occurs in the same position on every record within a file. The data files for each grade/age are described in Tables VI.13, 14, and 15.

As explained in Chapter III, and due to the BIB Spiralling design, students were administered different blocks of exercises during the 1983-84 assessment. As a result, each student record contains blank spaces for the exercise blocks which were not included in his or her assessment booklet (missing by design). In addition, fields are blank for items which did not appear in booklets due to a printing error and for the professionally-scored items which were not included in reliability checks (see Chapter IV).

The following codes have been included in the raw data files, codebooks, and machine-readable catalogs:

Table VI.1 Code Definitions

Code for Field Width = 1	Code for Field Width = 2	Code Definition
5	55	Illegible (professionally-scored items only)
6	66	Off Task (professionally-scored items only)
7	77	I Don't Know
8	88	Omitted or Not Reached
9	99	Out-of-Range Response

C. Layouts

With the exception of field types, all information in the layouts has been numerically coded. The layouts include the following information for each data field:

Seq. No. (Sequence Number): Fields are numbered sequentially to represent the order in which they appear on the data record.

Field Name: A short name (of eight characters or less) which identifies the field. The format of the field names associated with response data is explained below:

Position 1 identifies nature/source of the response data:

- B = Common background item within common background block
- S = Background and attitude item within cognitive block
- N = Cognitive item within cognitive block
- C = School questionnaire item
- T = Teacher questionnaire item
- X = Excluded student questionnaire item

Positions 2 through 5 identify an exercise (Student files) or question (School, Teacher, Excluded Student files)

Positions 6 through 7 identify a part within an exercise (Student files) or a part within a question (School, Teacher, Excluded Student files)

Position 8 identifies the block containing an item (Student BIB Spiral files) or tape containing an item (Student Paced Tape files)

Col. Pos. (Column Position): The start location of the field on the data record.

Field Width: The number of characters in the field.

Decimal Places: The number of digits to the right of the decimal point in the field. The raw data contains implicit and explicit decimal points.

Type: The files include three field types, as follows:

Type A (Alpha) fields designate free-response, alpha-numeric data. For example, several multiple-choice items included both fixed responses which a student could circle and a portion for "other" responses which a student could fill-in. The fill-in portion of the item is a Type A field. (The fixed, multiple-choice portion of the item is a Type D field).

Type C (Continuous) fields designate continuous numerical data without fixed ranges.

Type D (Discrete) fields designate discrete data with a fixed number of responses. Type D fields may include raw item responses or imputed (derived) categorical variables.

Type DI (Discrete with "I Don't Know") fields designate discrete data with a special code for an "I Don't Know" response. Depending on the field width, the "I Don't Know" value is either 7 or 77.

Range: The range of values or of valid responses for a field.

Key Value: The correct response for a multiple-choice item.

Short Label: A brief description of the information in the field.

D. Codebooks

Each entry in the codebooks represents a distinct assessment item or item information (i.e., weights). The first line of each codebook entry contains the following information:

Seq. No. (Sequence Number): In conjunction with the numbers assigned in the layouts, the fields in the codebooks are numbered sequentially.

Field Name: A brief description of the information in the field. The field names in the codebooks correspond to those in the layouts.

Rel. Ind. (Released Indicator): Indicates that an item has been released to the public ("R") or that an item has been held secure ("U").

Type: In conjunction with the four field types defined for the layouts above, the field type is designated as Alpha ("A"), Continuous ("C"), Discrete ("D"), or Discrete with "I Don't Know" ("DI").

Block: Indicates that information appears in either an ID block or a weight block (WT) or, for assessment items, indicates the block in which an item appeared for the grade/age group of students for which the codebook was prepared. (See Table VI.2 for block definitions).

Item No.: Indicates the number of an item for the grade/age group of students for which the codebook was prepared.

Ages: Indicates the grade/age student groups to whom an item was administered, as follows:

1 = Grade 4/Age 9 students;
2 = Grade 8/Age 13 students; and,
3 = Grade 11/Age 17 students.

Please note that, for items administered to more than one grade/age group, the information under block and item number refers only to the grade/age group for which a codebook was prepared. For example, the block location and item number for an item in the grade 4/age 9 (grade/age 1) codebook apply to grade/age 1 only. The block location and item number may be different for grade/age groups 2 and 3. The block and item numbers for grade/age groups 2 and 3 are indicated in the appropriate codebooks.

Name/Description: Provides a brief description of the item or information in the field.

Old ID (NAEP ID Number): If an item has been used in the past, the ID number assigned to it during previous assessments is included as the last number on the first line of the codebook entry.

For all discrete variables and items, the third and subsequent lines contain each valid data value, its associated label, and the unweighted frequency of that value in the data file associated with the codebook. (For cognitive items, the key data value is indicated by an asterisk.) The last line under each discrete variable entry contains the "TOTAL" or sum of the frequency counts as an extra check for analyses.

For items within a given grade/age cohort for which IRT estimates have been calibrated, the third through fifth lines also contain the IRT parameters and their values: parameter "a" (discrimination); parameter "b" (difficulty); and parameter "c" (lower asymptote).

E. Machine-Readable Catalogs

Each raw data file has a corresponding machine-readable file; these files all have the suffix CAT. The files, designed to help users to extract data of interest from the raw data, contain a record for each variable or item on the raw data files. Table VI.3 contains the machine-readable catalog data layout. Specific information concerning the contents of the catalogs is provided below.

Field Sequence Number: Fields are numbered sequentially to represent the order in which they appear on the raw data record.

Field Name: A short name of eight characters or less that identifies the field.

Table VI.2
Block Definitions

Block	Location	Description
ID	Student Files	Assessment identification and information from booklet cover
WT	Student Files	Weights and derived variables
CB	Student Files	Common background items
BA - BY	Student Files	BIB and UBIB item blocks (note: there is no block BI)
CP	Grade/Age 3 Paced Files	Common background items specific to Grade 11/Age 17 Paced Tapes
PB	Paced Files	Paced Tape background and attitude items
P1 - P4	Paced Files	Paced cognitive items; correspond to Paced Tapes 64 through 67, respectively
XI	Excluded Student Files	Assessment identification and information from questionnaire cover
XW	Excluded Student Files	Weights and derived variables
XQ	Excluded Student Files	Excluded student questionnaire items
TI	Teacher Files	Assessment identification and information from questionnaire cover
TW	Teacher Files	Weights and derived variables
TQ	Teacher Files	Teacher questionnaire items
SI	School Files	Assessment identification
SW	School Files	Weights and derived variables
SQ	School Files	School questionnaire items

Table VI.3

NAEP 1983-84 Machine-Readable Catalog Data Layout

Start - End Columns	Field Width	Field Description	Comments
1 - 4	4	Field Sequence Number	
5 - 12	8	Field Name	New NAEP Identification
13 - 16	4	Start Column	
17 - 20	4	End Column	
21 - 22	2	Field Width	
23 - 23	1	Decimal Places	
24 - 24	1	Field Type	1=Discrete 2=Continuous 3=Alpha
25 - 26	2	Number of Valid Responses	Excluding Multiple, Out-Of-Range and I Don't Know Responses
27 - 28	2	Correct Response	
29 - 30	2	I Don't Know (IDK) Code	
31 - 32	2	No Response Code	
33 - 34	2	Multiple and Out-Of-Range Code	
35 - 84	50	Field Label	
85 - 100	16	Old NAEP Identification	
101 - 124	24	IRT Parameters	Three fields, eight positions each
125 - 126	2	Number of Response Values and Labels	This number determines the number of response values and labels that follow
127 - 128	2	Response Value	
129 - 148	20	Response Label	1st Value
149 - 150	2	Response Value	
151 - 170	20	Response Label	2nd Value
. . .		. . .	. . .
1645 - 1646	2	Response Value	
1647 - 1666	20	Response Label	70th Value

Start Column: The start location of the field on the rav data record.

End Column: The end location of the field on the rav data record.

Field Width: The number of characters in the field.

Decimal Places: The number of digits to the right of the decimal point in the field. The rav data contains implicit and explicit decimal points.

Field Type: The files include three field types, as follovs:

> Type 1 (Discrete) fields designate discrete data vith a fixed number of responses. Type 1 fields may include rav item responses or imputed categorical variables.
>
> Type 2 (Continuous) fields designate continuous numerical data without fixed ranges.
>
> Type 3 (Alpha) fields designate free-response, alpha-numeric data. For example, several multiple-choice items include both fixed responses which a student could circle and a portion for "other" responses which the student could fill in. The fill-in portion of the item is a Type 3 field. (The fixed, multiple-choice portion of the item is a Type 1 field.)

Number of Valid Responses: The number of valid responses for an item, excluding multiple, out-of-range, and I Don't Knov responses.

Correct Response: This is a two position field. If the second position is blank, the item has a unique correct response in the first position. If the second position is not blank, the item has more than one correct response and the field indicates the correct response range. The first position is the lovest correct response value; the second is the highest correct response value. For example, if possible responses for a professionally-scored writing item ranged from 0 to 5, and 3 to 5 was considered an acceptable response, the first position of the field would contain a 3 and the second position would contain a 5.

I Don't Knov: For appropriate multiple-choice items, the numbers in the "IDK Value" column reflect the option to respond by indicating "I Don't Knov." "I Don't Knov" values have been recoded to 7 or 77. Otherwise, this field is blank.

No Response Code: Where applicable, omitted or not reached values have been recoded to 8 or 88. Otherwise, this field is blank.

Multiple and Out-of-Range Code: Where applicable, multiple or out-of-range responses have been recoded to 9 or 99. Otherwise, this field is blank.

Field Label: A 50-character description of the item or variable.

Old NAEP Identification: If an item has been used in the past, this is the number assigned to it during previous assessments.

IRT Parameters: Three eight-character fields containing IRT item parameters: parameter "a" (discrimination); parameter "b" (difficulty); and parameter "c" (lower asymptote). Each parameter is represented to a precision of five decimal places with an explicit decimal point.

Number of Response Values and Labels: The number of possible valid responses plus "I Don't Know," no response, multiple and out-of-range.

Response Values and Labels: For each possible item response, a two-position field which indicates the response value and a 20-position text field which provides a brief description of the response.

F. SPSS-X and SAS Control Statement Files

All data files on Version 3.1 Public-Use Data Tapes are accompanied by separate control files to facilitate the creation of SPSS-X and SAS system files. These control files include statements for variable definitions, variable labels, missing value codes, value labels, and an optional section for creating and storing scored variables. Each set of control statements also generates unweighted descriptive statistics of the reporting variables for the related data file and a listing of the contents of the saved system file.

Specific details on the structure and use of these control files will be included in appropriate system sections. The common features of both types of control files, as well as general guidelines, are provided below.

1. Variable Definition: The field names are listed in the order in which they appear on the file, along with their column position and input formats. If the field is numeric with no decimal places, no format is provided. Otherwise the format is indicated by a number for the number of decimal places, or a '$' or '(A)' for a non-numeric field.

2. Variable Labels: A 40-character text description for each field.

3. Missing Values: All blank fields in the data are automatically set to the system missing value by each package. However, all multiple-choice and some open-ended items were prone to either multiple or out-of-range responses. These items were coded as fields of 9s in the data files. The control statement files instruct each system to treat these values as missing.

4. Value Labels: All numeric fields with discrete (or categorical) values are provided with 20-character text descriptors for each value within the variable's range.

5. Scoring: For each item with one or more correct responses, control statements are provided for creating a scored variable, its label, and its value labels. The scoring of each item is performed according to the following scheme: missing values are copied as is, correct response values are recoded to 1, all other values, including No Response and "I Don't Know," are recoded as 0. The scoring of the No Response and "I Don't Know" values are coded separately from other incorrect responses to allow the user to edit these control statements and substitute alternate values.

   The scored variable names are derived by replacing the value in the sixth and seventh digits of the original name with that value plus 50. For example, the scored version of item number N001503A is N001553A. The entire block of scoring control statements is performed conditionally and, by default, will not be saved on the system file. The user must edit only one statement in either type of file to invoke the scoring and to save the new variables.

IMPORTANT NOTE: The system file generation programs cannot run if both the control statement file and its corresponding data file reside on the same tape. Both SPSS-X and SAS will try to read a data file before they have completed processing the control statement file, which is physically impossible if both files are on the same tape. It is advisable that the user copy the control files to disk, as they require less storage space and allow the user to edit the control statements before generating the system files.

G. Creating SPSS-X System Files

Each SPSS-X control statement file is linked to its corresponding data file through the file name: the suffix DAT in the data file name is replaced by SPX to obtain the control statement file name. For example, file "Y15RDWR1.BIB.SPX" is the control statement file for data file "Y15RDWR1.BIB.DAT."

All SPSS-X control statement files have been generated according to the following structure:

Table VI.4 SPSS-X Control Statement Synopsis

```
TITLE
   label for sysout of file generation run
FILE LABEL
   label to be stored with file
DOCUMENT
   text description of data to be saved in file
DATA LIST FILE=RAWDATA/
   variable names, locations, & formats
 VARIABLE LABELS
   40-character label for each variable
 MISSING VALUES
   list of variables to have user-missing values assigned
 VALUE LABELS
   variable names, values, & value labels
 TEMPORARY                          [delete this statement to
                                     save scored variables]
 RECODE
   oldvar (SYSMIS=SYSMIS)  (9=9)  (keyval=1)
   (nrval=0)  (idkval=0)  (ELSE=0)  INTO  newvar
 .
 .
 .

 VARIABLE LABELS
   labels for new variables
 MISSING VALUES
   for multiple & out-of-range recodes
 VALUE LABELS
   1=Correct    0=Incorrect
 FREQUENCIES
   reporting variables
 SAVE   OUTFILE=SYSFILE/COMPRESSED
 DISPLAY LABELS
```

The TEMPORARY command instructs SPSS-X to perform the subsequent scoring statements on a temporary basis and delete the nev variables after the next procedure encountered (FREQUENCIES). Thus, the scored variables will NOT be saved on the system file unless the TEMPORARY command is commented or edited out.

All control statement files assume that the file handle (or DDNAME) for the input data file is RAWDATA, and the file handle for the output system file is SYSFILE.

The control statements were coded according to the command and procedure descriptions in the SPSS-X User's Guide (SPSS Inc., McGraw-Hill Book Company, 1983). They were tested under SPSS-X Version 2.1 (IBM-OS/MVS).

H. Creating SAS System Files

Each SAS control statement file is linked to its corresponding data file through the file name: the suffix DAT in the data file name is replaced by SAS to obtain the control statement file name. For example, file "Y15RDWR1.BIB.SAS" is the control statement file for data file "Y15RDWR1.BIB.DAT."

All SAS control statement files have been generated according to the following structure:

Table VI.5 SAS Control Statement Synopsis

```
TITLE
DATA SYSFILE.xxx;
INFILE RAWDATA;
INPUT
  Variable names, column positions, & formats
LABEL
  40-character variable labels
ARRAY MVn (I)
  list of variables to be recoded for missing
*DO OVER MVn;
  *  IF MVn=7   THEN MVn=.;
  *  IF MVn=8   THEN MVn=.;
  *  IF MVn=9   THEN MVn=.;
  *  END;
%MACRO FMTVAR;
 PROC FORMAT;
 VALUE
  variable name    value=value label
  .
  .
%MEND FMTVAR;
LENGTH DEFAULT=2
  other variables with appropriate lengths;
%MACRO SCORE;
%MACRO RECODE;
  SAS macro to perform scoring for each variable
%MEND RECODE;
%RECODE
  (oldvar,newvar,idkval,nrval,keyval)
  .
  .
LABEL
  labels for new variables
PROC FORMAT;
  value labels for new variables
%MEND SCORE;
*%SCORE;                              [delete asterisk to
                                      save scored variables]
%FMTVAR;
PROC FREQ;
TABLES
  reporting variables
PROC CONTENTS NOSOURCE POSITION;
```

All SAS control files use the SAS Macro Language facility to reduce the number of source statements generated and to provide consistent performance of repetitive functions. Therefore, the user must ensure that the MACRO option is invoked whenever processing any of the control statement files.

The DO OVER through END statements following each ARRAY statement set up the conversion of the "I Don't Know," No Response, and Multiple Response codes to the system missing value. However, once this conversion is executed and saved on the system file, these recoded values will be indistinguishable from actual missing values on the original data file. For this reason, these statements have been commented out to allow the user to decide which, if any, of the values are to be recoded. To activate the recoding, delete the asterisks preceding the DO OVER and END statements, and from the appropriate IF THEN statement(s).

The SCORE MACRO sequence sets up the creation of scored variables and their labels. To save these variables on the system file, edit the statement immediately following the MACRO and delete the asterisk in the first column.

The control statements were coded according to the command and procedure descriptions in the SAS User's Guide: Basics 1982 Edition (SAS Institute Inc., 1982). They were tested under SAS Version 82.4 (IBM-OS/MVS).

I. Merging Files Under SPSS-X or SAS

The NAEP data files are structured to facilitate matching among the four instruments (Student, Teacher, School, and Excluded Student). However, for the purposes of analysis and reporting, only four types of linkages are valid:

1) School with Student (BIB Spiral and Paced Tape)
2) Teacher with Student (BIB Spiral only)
3) School with Excluded Student
4) School with Teacher with Student (BIB Spiral only)

The primary linkage on all files is through the scrambled PSU and school code fields: SCRPSU, SSCRPSU, TSCRPSU and XSCRPSU. The secondary linkage for the BIB Spiral and Teacher files is through the scrambled teacher code fields: SCRTC and TSCRTC. All files are sorted by these fields to permit direct match-merging without the need to re-sort.

When a hierarchical file match is performed, both SPSS-X and SAS build a rectangular file at the level of the lowest file in the match. Each record from the higher order file is repeated across the corresponding records of the lower order file. For example, in matching School with Student data, the information from one school record is repeated across all student records belonging to that school. Clearly,

the number of variables from the higher order file will have a greater impact on the size of the resulting merged file.

The examples contained in Tables VI.6 through VI.9 will perform direct matches according to the four linkages listed above. The KEEP statements are not necessary to the performance of the merge, but when applied to only those variables required for analysis will make more efficient use of computer resources. These examples also assume that no transformations are to be performed on the input files. If transformations are desired for analysis, the most efficient course to follow would be to transform the variables from the higher order file first, perform the match procedure, then transform the variables from the lower order file.

Table VI.6
Matching School and Student Files

SPSS-X

```
MATCH FILES
  TABLE=SCHOOL/
     RENAME=(SSCRPSU=SCRPSU)/
  FILE=STUDENT/
  KEEP=SCRPSU,other school & student variables/
  BY=SCRPSU
```

SAS

```
DATA MATCH1;
  MERGE SCHOOL (RENAME=(SSCRPSU=SCRPSU)
                KEEP=SSCRPSU other school variables)
        STUDENT(KEEP=SCRPSU other student variables);
  BY SCRPSU;
```

Table VI.7
Matching Teacher and Student Files

SPSS-X

```
MATCH FILES
  TABLE=TEACHER/IN=INTEACH/
     RENAME=(TSCRPSU=SCRPSU)(TSCRTC=SCRTC)/
  FILE=STUDENT/
  KEEP=SCRPSU,SCRTC,other teacher & student variables/
  BY=SCRPSU,SCRTC
SELECT IF (INTEACH)
```

SAS

```
DATA MATCH2;
  MERGE TEACHER(RENAME=(TSCRPSU=SCRPSU TSCRTC=SCRTC) IN=T
                KEEP=TSCRPSU TSCRTC other teacher variables)
        STUDENT(KEEP=SCRPSU SCRTC other student variables);
  BY SCRPSU SCRTC;
IF T;
```

Table VI.8
Matching School and Excluded Student Files

SPSS-X

```
MATCH FILES
  TABLE=SCHOOL/
     RENAME=(SSCRPSU=SCRPSU)/
  FILE=EXCLUDE/
     RENAME=(XSCRPSU=SCRPSU)/
  KEEP=SCRPSU,other school & excluded student variables/
  BY=SCRPSU
```

SAS

```
DATA MATCH3;
  MERGE SCHOOL (RENAME=(SSCRPSU=SCRPSU)
           KEEP=SSCRPSU other school variables)
        EXCLUDE(RENAME=(XSCRPSU=SCRPSU)
           KEEP=SCRPSU other excluded student variables);
  BY SCRPSU;
```

Table VI.9
Matching School, Teacher and Student Files

SPSS-X

```
MATCH FILES
  TABLE=SCHOOL/IN=INSCHOOL/
     RENAME=(SSCRPSU=SCRPSU)/
  FILE=TEACHER/
     RENAME=(TSCRPSU=SCRPSU)(TSCRTC=SCRTC)/
  KEEP=SCRPSU,SCRTC,other school & teacher variables/
  BY=SCRPSU
SELECT IF (INSCHOOL)
MATCH FILES
  TABLE=*/IN=INTEACH/
  FILE=STUDENT/
  KEEP=SCRPSU,SCRTC,other school,teacher & student variables/
  BY=SCRPSU,SCRTC
SELECT IF (INTEACH)
```

SAS

```
DATA MATCH4A;
  MERGE SCHOOL (RENAME=(SSCRPSU=SCRPSU) IN=S
                KEEP=SSCRPSU other school variables)
        TEACHER(RENAME=(TSCRPSU=SCRPSU TSCRTC=SCRTC)
                KEEP=TSCRPSU TSCRTC other teacher variables);
  BY SCRPSU;
  IF S;
DATA MATCH4B;
  MERGE MATCH4A (IN=T
                 KEEP=SCRPSU SCRTC other school
                                      & teacher variables)
        STUDENT(KEEP=SCRPSU SCRTC other student variables);
  BY SCRPSU SCRTC;
  IF T;
```

J. Computing the Estimated Variance of a Mean (Jackknifing) Using SPSS-X or SAS

Three methods for computing the estimated variance of a mean are presented in this section in SPSS-X and SAS program code form (see Chapter IV, Section H for discussion of the jackknife procedure). The first method given is the multi-weight method which may be used for any variable except the plausible reading and writing values. The second method is the multi-weight method to be used for the plausible values, making a correction for the variance in estimating the values. The third method is a single-weight method which is less computationally intense, but not as exact as the multi-weight method.

The technique used for all three methods is essentially the same: for each variable to be jackknifed, generate two vectors of weighted sums and products. Sum these vectors across the entire file using the AGGREGATE (SPSS-X) or SUMMARY (SAS) procedures. From the weighted sums compute the weighted means and thence compute the estimated variance and standard error.

One advantage to this aproach is that it will accomplish the computation in one pass of the data. Another advantage, afforded by the AGGREGATE (SPSS-X) and SUMMARY (SAS) procedures, is the facility to compute subgroup statistics by using the BREAK keyword with the variable(s) defining the subgroups. All computations performed subsequent to the aggregation procedure are performed on each record of the collapsed file, corresponding to one of the subgroups. In the examples contained in Tables VI.10, 11, and 12, the variable SEX is used as a break control variable, and the derived statistics are printed for each sex code.

In Tables VI.10 and VI.12, the variable X may be any variable or transformation of variables except the plausible reading and writing values. In Table VI.11, the vector or array named VALUE refers to the set of plausible reading or writing values.

Table VI.10
Standard Error Computation: Multi-Weight Method

SPSS-X

```
GET FILE=STUDENT/
   KEEP=SEX,WEIGHT,JKWT01 TO JKWT32,X
VECTOR WT=JKWT01 TO JKWT32
VECTOR WX(32)
SELECT IF (NOT SYSMIS(X))
COMPUTE WTX=WEIGHT*X
LOOP #I=1 TO 32
.  COMPUTE WX(#I) = WT(#I)*X
END LOOP
AGGREGATE  OUTFILE=*/BREAK=SEX/UWN=N(WEIGHT)/
   SWT,SW1 TO SW32 = SUM(WEIGHT,JKWT01 TO JKWT32)/
   SWX,SX1 TO SX32 = SUM(WTX,WX1 TO WX32)/
VECTOR SW = SW1 TO SW32
VECTOR SX = SX1 TO SX32
COMPUTE XBAR = SWX/SWT
COMPUTE XVAR = 0
LOOP #I=1 TO 32
.  COMPUTE #DIFF = SX(#I)/SW(#I) - XBAR
.  COMPUTE XVAR = XVAR + #DIFF * #DIFF
END LOOP
COMPUTE XSE = SQRT(XVAR)
PRINT FORMATS XVAR,XSE (F8.4)
LIST VARIABLES=SEX,UWN,SWT,XBAR,XVAR,XSE
FINISH
```

Table VI.10
(continued)

SAS

```
DATA A;
   SET  STUDENT;
   ARRAY WT JKWT01-JKWT32;
   ARRAY WX WX1-WX32;
   IF (X NE .);
   WTX = WEIGHT*X;
   DO OVER WT;
      WX = WT*X;
   END;
PROC SUMMARY;
   CLASS SEX;
   VAR WEIGHT JKWT01-JKWT32 WTX WX1-WX32;
   OUTPUT OUT=B    N(WEIGHT)=UWN
      SUM(WEIGHT WTX JKWT01-JKWT32 WX1-WX32)=
          SWT SW1-SW32 SWX SX1-SX32;
DATA C;
   SET B;
   ARRAY SW SW1-SW32;
   ARRAY SX SX1-SX32;
   XBAR = SWX/SWT;
   XVAR = 0;
   DO OVER SW;
      DIFF = (SX/SW)-XBAR;
      XVAR = XVAR+DIFF*DIFF;
   END;
   XSE = SQRT(XVAR);
PROC PRINT;
   VAR SEX UWN SWT XBAR XVAR XSE;
```

Table VI.11
Standard Error Computation: Multi-Weight Method
(with Correction for Imputation)

SPSS-X

```
GET FILE=STUDENT/
   KEEP=SEX,WEIGHT,JKWT01 TO JKWT32,REDVAL1 TO REDVAL5
VECTOR VALUE=REDVAL1 TO REDVAL5
VECTOR WT=JKWT01 TO JKWT32
VECTOR WX(32)
VECTOR WS(5)
SELECT IF (NOT SYSMIS(REDVAL1))
COMPUTE WTX=WEIGHT*REDVAL1
LOOP #I=1 TO 32
.  COMPUTE WX(#I) = WT(#I)*REDVAL1
END LOOP
LOOP #I=1 TO 5
.  COMPUTE WS(#I) = VALUE(#I)*WEIGHT
END LOOP
AGGREGATE  OUTFILE=*/BREAK=SEX/UWN=N(WEIGHT)/
   SWT,SW1 TO SW32 = SUM(WEIGHT,JKWT01 TO JKWT32)/
   SWX,SX1 TO SX32 = SUM(WTX,WX1 TO WX32)/
   SS1 TO SS5 = SUM(WS1 TO WS5)/
VECTOR SW = SW1 TO SW32
VECTOR SX = SX1 TO SX32
VECTOR SS = SS1 TO SS5
COMPUTE XBAR = SWX/SWT
COMPUTE XVAR = 0
LOOP #I=1 TO 32
.  COMPUTE #DIFF = SX(#I)/SW(#I) - XBAR
.  COMPUTE XVAR = XVAR + #DIFF * #DIFF
END LOOP
LOOP #I=1 TO 5
.  COMPUTE SS(#I) = SS(#I)/SWT
END LOOP
COMPUTE SVAR = VARIANCE(SS1 TO SS5)
COMPUTE XSE = SQRT(XVAR+SVAR)
PRINT FORMATS XVAR,SVAR,XSE (F8.4)
LIST VARIABLES=SEX,UWN,SWT,XBAR,XVAR,SVAR,XSE
FINISH
```

Table VI.11
(continued)

SAS

```
DATA A;
   SET  STUDENT;
   ARRAY WT    JKWT01-JKWT32;
   ARRAY WX    WX1-WX32;
   ARRAY VALUE REDVAL1-REDVAL2;
   ARRAY WS    WS1-WS5;
   IF (REDVAL1 NE .);
   WTX = WEIGHT*REDVAL1;
   DO OVER WT;
      WX = WT*REDVAL1;
   END;
   DO OVER WS;
      WS = SCALE*WEIGHT;
   END DO;
PROC SUMMARY;
   CLASS SEX;
   VAR WEIGHT JKWT01-JKWT32 WTX WX1-WX32;
   OUTPUT OUT=B    N(WEIGHT)=UWN
      SUM(WEIGHT WTX JKWT01-JKWT32 WX1-WX32 WS1-WS5=
          SWT SW1-SW32 SWX SX1-SX32 SS1-SS5;
DATA C;
   SET B;
   ARRAY SW SW1-SW32;
   ARRAY SX SX1-SX32;
   ARRAY SS SS1-SS5;
   XBAR = SWX/SWT;
   XVAR = 0;
   DO OVER SW;
      DIFF = (SX/SW)-XBAR;
      XVAR = XVAR+DIFF*DIFF;
   END;
   DO OVER SS;
      SS = SS/SWT;
   END DO;
   SVAR = VAR(SS1,SS2,SS3,SS4,SS5);
   XSE = SQRT(XVAR+SVAR);
PROC PRINT;
   VAR SEX UWN SWT XBAR XVAR SVAR XSE;
```

Table VI.12
Standard Error Computation: Single-Weight Method

SPSS-X

```
GET FILE=STUDENT/
   KEEP=SEX,JKPAIR,JKREPL,WEIGHT,X
VECTOR WT(32)
VECTOR WX(32)
SELECT IF (NOT SYSMIS(X))
LOOP #I=1 TO 32
.  COMPUTE WT(#I) = $SYSMIS
.  COMPUTE WX(#I) = $SYSMIS
END LOOP
COMPUTE WTX=WEIGHT*X
COMPUTE #W = WEIGHT
IF (JKREPL EQ 2) #W = -WEIGHT
COMPUTE WT(JKPAIR) = #W
COMPUTE WX(JKPAIR) = #W * X
AGGREGATE  OUTFILE=*/BREAK=SEX/UWN=N(WEIGHT)/
   SWT,SW1 TO SW32 = SUM(WEIGHT,JKWT01 TO JKWT32)/
   SWX,SX1 TO SX32 = SUM(WTX,WX1 TO WX32)/
VECTOR SW = SW1 TO SW32
VECTOR SX = SX1 TO SX32
COMPUTE XBAR = SWX/SWT
COMPUTE XVAR = 0
LOOP #I=1 TO 32
.   DO IF (NOT SYSMIS(SW(#I)))
.     COMPUTE #DIFF = (SWX+SX(#I))/(SWT+SW(#I)) - XBAR
.     COMPUTE XVAR = XVAR + #DIFF * #DIFF
.   END IF
END LOOP
COMPUTE XSE = SQRT(XVAR)
PRINT FORMATS XVAR,XSE (F8.4)
LIST VARIABLES=SEX,UWN,SWT,XBAR,XVAR,XSE
FINISH
```

Table VI.12
(continued)

SAS

```
DATA A;
   SET  STUDENT
   ARRAY WT WT1-WT32;
   ARRAY WX WX1-WX32;
   IF (X NE .);
   WTX = WEIGHT*X;
   DO OVER WT;
      WT = .;
      WX = .;
   END;
   W = WEIGHT;
   IF JKREPL=2 THEN W = -WEIGHT;
    I_ = JKPAIR;
   WT = W;
   WX = W*X;
   PROC SUMMARY;
   CLASS SEX;
   VAR WEIGHT WT1-WT32 WTX WX1-WX32;
   OUTPUT OUT=B    N(WEIGHT)=UWN
      SUM=SWT SW1-SW32 SWX SX1-SX32;
DATA C;
   SET B;
   ARRAY SW SW1-SW32;
   ARRAY SX SX1-SX32;
   XBAR = SWX/SWT;
   XVAR = 0;
   DO OVER SW;
      IF SW=. THEN DO;
         SW = 0;
         SX = 0;
      END;
      DIFF = ((SWX+SX)/(SWT+SW))-XBAR;
      XVAR = XVAR+DIFF*DIFF;
   END;
   XSE = SQRT(XVAR);
PROC PRINT;
   VAR SEX UWN SWT XBAR XVAR XSE;
```

Table VI.13

NAEP 1983-84 Public-Use Data Tape Description
Grade 4/Age 9

Data Files	Record Length	Block Size	# of Records	File Name
Data Files				
1. Student BIB Spiral Data	1728	19008	26,087	Y15RDWR1.BIB.DAT
2. PACED TAPE 64	641	18589	1,403	Y15RDWR1.P64.DAT
3. PACED TAPE 65	665	18620	1,356	Y15RDWR1.P65.DAT
4. PACED TAPE 66	649	18821	1,389	Y15RDWR1.P66.DAT
5. PACED TAPE 67	644	18676	1,344	Y15RDWR1.P67.DAT
6. Excluded Student Questionnaire	595	19040	1,416	Y15RDWR1.EXQ.DAT
7. Teacher Questionnaire	606	18786	1,027	Y15RDWR1.TEQ.DAT
8. School Questionnaire	581	18592	663	Y15RDWR1.SCQ.DAT
SPSS-X Control Statement Files				
9. Student BIB Spiral Data	80	19040	3,028	Y15RDWR1.BIB.SPX
10. PACED TAPE 64	80	19040	793	Y15RDWR1.P64.SPX
11. PACED TAPE 65	80	19040	695	Y15RDWR1.P65.SPX
12. PACED TAPE 66	80	19040	751	Y15RDWR1.P66.SPX
13. PACED TAPE 67	80	19040	669	Y15RDWR1.P67.SPX
14. Excluded Student Questionnaire	80	19040	369	Y15RDWR1.EXQ.SPX
15. Teacher Questionnaire	80	19040	694	Y15RDWR1.TEQ.SPX
16. School Questionnaire	80	19040	436	Y15RDWR1.SCQ.SPX
SAS Control Statement Files				
17. Student BIB Spiral Data	80	19040	4,000	Y15RDWR1.BIB.SAS
18. PACED TAPE 64	80	19040	947	Y15RDWR1.P64.SAS
19. PACED TAPE 65	80	19040	892	Y15RDWR1.P65.SAS
20. PACED TAPE 66	80	19040	918	Y15RDWR1.P66.SAS
21. PACED TAPE 67	80	19040	854	Y15RDWR1.P67.SAS
22. Excluded Student Questionnaire	80	19040	442	Y15RDWR1.EXQ.SAS
23. Teacher Questionnaire	80	19040	1,240	Y15RDWR1.TEQ.SAS
24. School Questionnaire	80	19040	613	Y15RDWR1.SCQ.SAS
Machine-Readable Catalog Files				
25. Student BIB Spiral Data	1666	18326	824	Y15RDWR1.BIB.CAT
26. PACED TAPE 64	1666	18326	195	Y15RDWR1.P64.CAT
27. PACED TAPE 65	1666	18326	200	Y15RDWR1.P65.CAT
28. PACED TAPE 66	1666	18326	196	Y15RDWR1.P66.CAT
29. PACED TAPE 67	1666	18326	188	Y15RDWR1.P67.CAT
30. Excluded Student Questionnaire	1666	18326	128	Y15RDWR1.EXQ.CAT
31. Teacher Questionnaire	1666	18326	332	Y15RDWR1.TEQ.CAT
32. School Questionnaire	1666	18326	221	Y15RDWR1.SCQ.CAT

Table VI.14

NAEP 1983-84 Public-Use Data Tape Description
Grade 8/Age 13

Data Files	Record Length	Block Size	# of Records	File Name
Data Files				
1. Student BIB Spiral Data	1834	18340	28,405	Y15RDWR2.BIB.DAT
2. PACED TAPE 64	643	18647	1,310	Y15RDWR2.P64.DAT
3. PACED TAPE 65	666	18648	1,276	Y15RDWR2.P65.DAT
4. PACED TAPE 66	653	18937	1,283	Y15RDWR2.P66.DAT
5. PACED TAPE 67	655	18995	1,289	Y15RDWR2.P67.DAT
6. Excluded Student Questionnaire	595	19040	1,448	Y15RDWR2.EXQ.DAT
7. Teacher Questionnaire	477	18603	790	Y15RDWR2.TEQ.DAT
8. School Questionnaire	580	18560	486	Y15RDWR2.SCQ.DAT
SPSS-X Control Statement Files				
9. Student BIB Spiral Data	80	19040	3,317	Y15RDWR2.BIB.SPX
10. PACED TAPE 64	80	19040	794	Y15RDWR2.P64.SPX
11. PACED TAPE 65	80	19040	699	Y15RDWR2.P65.SPX
12. PACED TAPE 66	80	19040	767	Y15RDWR2.P66.SPX
13. PACED TAPE 67	80	19040	736	Y15RDWR2.P67.SPX
14. Excluded Student Questionnaire	80	19040	369	Y15RDWR2.EXQ.SPX
15. Teacher Questionnaire	80	19040	583	Y15RDWR2.TEQ.SPX
16. School Questionnaire	80	19040	436	Y15RDWR2.SCQ.SPX
SAS Control Statement Files				
17. Student BIB Spiral Data	80	19040	4,307	Y15RDWR2.BIB.SAS
18. PACED TAPE 64	80	19040	959	Y15RDWR2.P64.SAS
19. PACED TAPE 65	80	19040	904	Y15RDWR2.P65.SAS
20. PACED TAPE 66	80	19040	943	Y15RDWR2.P66.SAS
21. PACED TAPE 67	80	19040	926	Y15RDWR2.P67.SAS
22. Excluded Student Questionnaire	80	19040	442	Y15RDWR2.EXQ.SAS
23. Teacher Questionnaire	80	19040	1,012	Y15RDWR2.TEQ.SAS
24. School Questionnaire	80	19040	606	Y15RDWR2.SCQ.SAS
Machine-Readable Catalog Files				
25. Student BIB Spiral Data	1666	18326	893	Y15RDWR2.BIB.CAT
26. PACED TAPE 64	1666	18326	197	Y15RDWR2.P64.CAT
27. PACED TAPE 65	1666	18326	202	Y15RDWR2.P65.CAT
28. PACED TAPE 66	1666	18326	201	Y15RDWR2.P66.CAT
29. PACED TAPE 67	1666	18326	200	Y15RDWR2.P67.CAT
30. Excluded Student Questionnaire	1666	18326	128	Y15RDWR2.EXQ.CAT
31. Teacher Questionnaire	1666	18326	274	Y15RDWR2.TEQ.CAT
32. School Questionnaire	1666	18326	220	Y15RDWR2.SCQ.CAT

Table VI.15

NAEP 1983-84 Public-Use Data Tape Description
Grade 11/Age 17

Data Files	Record Length	Block Size	# of Records	File Name
Data Files				
1. Student BIB Spiral Data	1989	17901	28,861	Y15RDWR3.BIB.DAT
2. PACED TAPE 64	663	18647	1,539	Y15RDWR3.P64.DAT
3. PACED TAPE 65	666	18648	1,540	Y15RDWR3.P65.DAT
4. PACED TAPE 66	653	18937	1,596	Y15RDWR3.P66.DAT
5. PACED TAPE 67	655	18995	1,534	Y15RDWR3.P67.DAT
6. Excluded Student Questionnaire	595	19040	1,361	Y15RDWR3.EXQ.DAT
7. Teacher Questionnaire	477	18603	915	Y15RDWR3.TEQ.DAT
8. School Questionnaire	585	18720	331	Y15RDWR3.SCQ.DAT
SPSS-X Control Statement Files				
9. Student BIB Spiral Data	80	19040	3,407	Y15RDWR3.BIB.SPX
10. PACED TAPE 64	80	19040	794	Y15RDWR3.P64.SPX
11. PACED TAPE 65	80	19040	699	Y15RDWR3.P65.SPX
12. PACED TAPE 66	80	19040	767	Y15RDWR3.P66.SPX
13. PACED TAPE 67	80	19040	736	Y15RDWR3.P67.SPX
14. Excluded Student Questionnaire	80	19040	369	Y15RDWR3.EXQ.SPX
15. Teacher Questionnaire	80	19040	572	Y15RDWR3.TEQ.SPX
16. School Questionnaire	80	19040	448	Y15RDWR3.SCQ.SPX
SAS Control Statement Files				
17. Student BIB Spiral Data	80	19040	4,527	Y15RDWR3.BIB.SAS
18. PACED TAPE 64	80	19040	959	Y15RDWR3.P64.SAS
19. PACED TAPE 65	80	19040	904	Y15RDWR3.P65.SAS
20. PACED TAPE 66	80	19040	943	Y15RDWR3.P66.SAS
21. PACED TAPE 67	80	19040	926	Y15RDWR3.P67.SAS
22. Excluded Student Questionnaire	80	19040	442	Y15RDWR3.EXQ.SAS
23. Teacher Questionnaire	80	19040	1,012	Y15RDWR3.TEQ.SAS
24. School Questionnaire	80	19040	626	Y15RDWR3.SCQ.SAS
Machine-Readable Catalog Files				
25. Student BIB Spiral Data	1666	18326	959	Y15RDWR3.BIB.CAT
26. PACED TAPE 64	1666	18326	197	Y15RDWR3.P64.CAT
27. PACED TAPE 65	1666	18326	202	Y15RDWR3.P65.CAT
28. PACED TAPE 66	1666	18326	201	Y15RDWR3.P66.CAT
29. PACED TAPE 67	1666	18326	200	Y15RDWR3.P67.CAT
30. Excluded Student Questionnaire	1666	18326	128	Y15RDWR3.EXQ.CAT
31. Teacher Questionnaire	1666	18326	274	Y15RDWR3.TEQ.CAT
32. School Questionnaire	1666	18326	225	Y15RDWR3.SCQ.CAT

VII. Related Machine-Readable Data Files and Printed Reports

Related Machine-Readable Data Files

Files are available for the following NAEP reading and writing assessments:

YEAR	AGE	SUBJECT AREA(S)
1979-80	9	Reading/Literature
1979-80	13	Reading/Literature
1979-80	17	Reading/Literature
1978-79	9	Art/Music/Writing
1978-79	13	Art/Music/Writing
1978-79	17	Art/Music/Writing
1978-79	9, 13, 17	Writing Essay Responses
1977	Adults	Science/Energy/Reading/Health
1974-75	9	Reading
1974-75	13	Reading
1974-75	17	Reading
1973-74	9	Career and Occupational Development/Writing
1973-74	13	Career and Occupational Development/Writing
1973-74	17	Career and Occupational Development/Writing
1973-74	Adults	Career and Occupational Development/Writing
1973-74	9, 13, 17	Writing Essay Responses
1970-71	9	Reading/Literature
1970-71	13	Reading/Literature
1970-71	17	Reading/Literature
1970-71	Adults	Reading/Literature
1969-70	9, 13, 17	Writing Essay Responses

For more information about NAEP Public-Use Data Tapes, contact:

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Educational Testing Service
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Related Printed Reports

The following reports provide additional information concerning reading and writing assessments. Please note that direct sources are included for each publication, but that most may be obtained through the Educational Resources Information Center (ERIC) database:

Applebee, A. N., Langer, J. A., & Mullis, I. V. The Writing Report Card: Writing Achievement in American Schools, 1984. National Assessment of Educational Progress, 1986(a). Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Applebee, A. N., Langer, J. A., & Mullis, I. V. Writing: Trends Across the Decade, 1974-84. National Assessment of Educational Progress, Report No. ISBN-0-88685-042-8; NAEP-15-W-01, 1986(b). Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

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DeCrow, R. Adult Reading Abilities: Definitions and Measurements. National Reading Center Foundation, Washington, DC, 6p., July 1972.

Exercise Administrator Administrative Instructions for Age Classes 1, 2 & 3 Year 11, October 1979-May 1980. Research Triangle Inst., Report No. NAEP-11-EA-46, 34p., Durham, NC, June 1979.

The First Assessment of Reading, 1970-71 Assessment. Released Exercise Set. No. 02-R-25. Education Commission of the States, Denver, CO. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Gadway, C. J. Critical Reading: Theme 8, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-08, 182p., May 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Drawing Inferences: Theme 7, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-07, 275p., August 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Gleaning Significant Facts from Passages: Theme 5, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-05, 225p., May 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Main Ideas and Organization: Theme 6, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-06, 152p., July 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Reading: Released Exercises. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Washington, DC, Report No. NAEP-02-R-20, 424p., July 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Reference Materials: Theme 4, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-04, 164p., July 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Understanding Words and Word Relationships: Theme 1 of the National Assessment of Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-01, 106p., April 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gadway, C. J. Written Directions: Theme 3, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-03, 155p., May 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Gallo, D. R. Reading Rate and Comprehension: 1970-71 Assessment. Education Commission of the States, Denver, CO. Report No. NAEP-02-R-09, 24p., December 1972. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Graphic Materials: Theme 2, Reading. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-R-02, 213p., June 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

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Introduction to the National Assessment of Educational Progress Public Use Data Tapes. National Assessment of Educational Progress. 62p., July 1982. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Johnson, S. S. A Survey of Reading Habits: Theme 4, Literature. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-02-L-04, 157p., May 1973. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC.

Kirsch, I. S. & Jungeblut, A. Literacy: Profiles of America's Young Adults, Final Report. National Assessment of Educational Progress, Report No. 16-PL-01, 1986. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Messick, S., Beaton, A., & Lord, F. NAEP Reconsidered: A New Design for a New Era. National Assessment of Educational Progress, Report No. NAEP-83-1, 93p., 1983. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

National Assessment of Educational Progress DS [District Supervisor] Training Manual, Year 11. Research Triangle Inst., 265p., Durham, NC, Report No. NAEP 11-DS-45, July 1979. Available from EDRS.

Norris, E. L. Writing Objectives. Committee on Assessing the Progress of Education. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Norris, E. L. & Boves, J. E. Reading Objectives. National Assessment of Educational Progress, 40p., 1970. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Norris, E. L. & Others. National Assessment of Educational Progress. 1969-1970 Writing: National Results. National Assessment of Educational Progress, Report No. NAEP-3 166p., November 1970. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Procedural Handbook: 1979-80 Reading and Literature Assessment. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. ISBN-0-89398-221-0; NAEP-11-RL-40, 103p., September 1981. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Procedural Handbook: 1978-79 Writing Assessment. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-10-W-40, 95p., February 1981. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

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Reading Comprehension of American Youth: Do They Understand What They Read? Results from the 1979-80 National Assessment of Reading and Literature. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. ISBN-0-89398-223-7; NAEP-11-R-02, 89p., July 1982. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

Reading in America: A Perspective on Two Assessments. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, Report No. NAEP-06-R-01, 35p., October 1976. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Reading and Literature Objectives, 1979-80 Assessment. No. 11-RL-10. Education Commission of the States, Denver, CO. National Assessment of Educational Progress, 25p., 1980. Available from NAEP, Educational Testing Service, Princeton, NJ 08541.

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Educational Testing Service
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IX. Appendices

IX. Appendices

Appendix 1 contains four IRT item parameter tables (see Chapter IV, Section F for information concerning reading item analysis and scale derivation). The first table (pages 1-4) lists each BIB/UBIB sample item used for IRT, its corresponding IRT parameters (A, B and C) and standard errors (SE), the block in which the item appears for each grade/age group (BLOCK), and the order in which the item appears within the block (ITEM).

The second, third and fourth tables (pages 5-7) list, by age group, each Paced sample item used for IRT, its corresponding IRT parameters (A, B, and C) and standard errors (SE), the block in which the item appears for that age group (BLOCK), and the order in which the item appears within the block (ITEM).

The IRT parameters A, B and C are available for computer extraction in the Machine-Readable Catalog (see Table VI.3 in Chapter VI).

Appendix 2 lists each cognitive and non-cognitive assessment item (in item number order), its corresponding short name (SHORT LABEL), the block(s) in which the item appears for each age group (BLOCK) and the order in which the item appears within the block(s) (ITEM).

Appendix 1

IRT Item Parameters and Usage

BIB SAMPLE: ALL GRADES/AGES

FIELD	A	SE	B	SE	C	SE	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
M001101	0.344	(0.048)	-0.384	(0.104)	0.291	(0.053)	BH	5	BH	6		
M001201	0.712	(0.183)	1.144	(0.403)	0.369	(0.053)			BH	7		
M001202	1.276	(0.187)	0.585	(0.197)	0.256	(0.037)			BH	8		
M001301	0.986	(0.118)	0.495	(0.173)	0.400	(0.043)			BH	9	BH	10
M001302	0.720	(0.087)	-1.548	(0.241)	0.497	(0.097)			BH	10	BH	11
M001303	1.534	(0.133)	0.407	(0.131)	0.281	(0.030)			BH	11	BH	12
M001401	0.999	(0.094)	0.001	(0.114)	0.251	(0.055)			BH	12	BH	13
M001501	1.808	(0.130)	-1.313	(0.152)	0.225	(0.047)	BH	10	BH	13	BH	14
M001502	1.643	(0.098)	-0.507	(0.061)	0.182	(0.026)	BH	11	BH	14	BH	15
M001503	1.345	(0.088)	-0.902	(0.086)	0.207	(0.043)	BH	12	BH	15	BH	16
M001504	1.448	(0.089)	-0.650	(0.068)	0.173	(0.032)	BH	13	BH	16	BH	17
M001509	0.654	(0.043)	2.079	(0.144)	0.0	(0.0)	BH	15	BH	18	BH	19
M001601	0.622	(0.041)	-0.959	(0.082)	0.133	(0.046)	BJ	12	BJ	11		
M001602	1.263	(0.079)	-0.692	(0.066)	0.250	(0.031)	BJ	13	BJ	12		
M001603	0.816	(0.073)	-0.031	(0.068)	0.233	(0.033)	BJ	14	BJ	13		
M001604	1.375	(0.101)	0.111	(0.063)	0.269	(0.018)	BJ	15	BJ	14		
M001701	0.981	(0.066)	-0.418	(0.090)	0.231	(0.059)			BJ	17	BJ	12
M001702	0.541	(0.116)	2.651	(0.621)	0.231	(0.028)			BJ	18	BJ	13
M001703	1.081	(0.080)	0.003	(0.096)	0.291	(0.044)			BJ	19	BJ	14
M001802	1.592	(0.140)	0.727	(0.131)	0.217	(0.012)	BJ	20	BJ	21		
M001901	1.644	(0.111)	0.210	(0.098)	0.331	(0.028)			BJ	22	BJ	15
M001906	0.934	(0.038)	0.156	(0.029)	0.0	(0.0)			BJ	24	BJ	17
M002001	1.197	(0.065)	-0.013	(0.050)	0.131	(0.020)	BK	9	BK	9	BK	9
M002002	1.444	(0.084)	-0.042	(0.055)	0.203	(0.020)	BK	10	BK	10	BK	10
M002003	1.583	(0.093)	-0.229	(0.054)	0.224	(0.022)	BK	11	BK	11	BK	11
M002101	0.941	(0.094)	1.171	(0.176)	0.247	(0.019)	BK	18	BK	12	BK	12
M002102	1.495	(0.100)	0.840	(0.118)	0.147	(0.012)	BK	19	BK	13	BK	13
M002201	1.704	(0.118)	-0.129	(0.078)	0.200	(0.037)			BK	14	BK	14
M002202	1.358	(0.120)	-0.349	(0.112)	0.337	(0.059)			BK	15	BK	15
M002203	0.783	(0.066)	-1.139	(0.137)	0.236	(0.085)			BK	16	BK	16
M002401	1.449	(0.096)	-0.375	(0.057)	0.128	(0.023)	BL	22	BL	22		
M002501	0.550	(0.053)	0.129	(0.100)	0.205	(0.057)			BL	23	BL	27
M002701	1.024	(0.102)	0.833	(0.164)	0.234	(0.032)			BL	24	BL	28
M002702	1.148	(0.077)	0.055	(0.065)	0.141	(0.023)	BL	20			BL	29
M002801	1.921	(0.114)	-0.767	(0.081)	0.175	(0.028)	BL	24	BL	25	BL	30
M002802	1.896	(0.110)	-0.912	(0.092)	0.143	(0.028)	BL	25	BL	26	BL	31
M002806	0.331	(0.028)	2.200	(0.188)	0.0	(0.0)	BL	26	BL	27	BL	32
M002902	0.558	(0.050)	-0.801	(0.114)	0.229	(0.071)			BM	6	BM	6
M002903	2.313	(0.180)	-0.341	(0.082)	0.253	(0.039)			BM	7	BM	7
M002904	1.289	(0.095)	-0.020	(0.087)	0.197	(0.041)			BM	8	BM	8
M002905	0.758	(0.058)	0.248	(0.083)	0.116	(0.040)			BM	9	BM	9
M002906	1.964	(0.148)	-0.363	(0.082)	0.230	(0.044)			BM	10	BM	10
M003001	1.293	(0.109)	1.153	(0.169)	0.207	(0.013)	BM	10	BM	11	BM	11
M003002	0.309	(0.029)	0.119	(0.065)	0.168	(0.041)	BM	11	BM	12	BM	12
M003003	2.294	(0.109)	1.724	(0.190)	0.120	(0.006)	BM	12	BM	13	BM	13
M003101	1.571	(0.100)	-0.645	(0.073)	0.267	(0.032)	BM	14	BM	14	BM	14
M003102	1.530	(0.083)	-0.359	(0.051)	0.145	(0.023)	BM	15	BM	15	BM	15
M003106	0.704	(0.042)	1.923	(0.124)	0.0	(0.0)	BM	16	BM	16	BM	16
M003201	1.207	(0.088)	-0.593	(0.087)	0.171	(0.056)			BN	12	BN	21
M003202	1.590	(0.124)	0.012	(0.093)	0.227	(0.038)			BN	13	BN	22
M003203	1.215	(0.101)	0.240	(0.107)	0.222	(0.039)			BN	14	BN	23
M003204	1.457	(0.120)	0.260	(0.112)	0.238	(0.035)			BN	15	BN	24
M003301	1.141	(0.081)	-0.410	(0.078)	0.158	(0.049)			BN	16	BN	25
M003401	1.467	(0.150)	-0.207	(0.092)	0.159	(0.047)			BN	17		
M003501	0.751	(0.062)	-0.448	(0.093)	0.172	(0.061)			BN	18	BN	27
M003601	1.452	(0.116)	-0.668	(0.099)	0.203	(0.060)			BN	19	BN	28
M003602	1.320	(0.109)	-0.130	(0.097)	0.241	(0.048)			BN	20	BN	29
M003701	0.736	(0.061)	-0.760	(0.104)	0.239	(0.060)	BN	23	BN	21	BN	30
M003702	1.071	(0.084)	-0.010	(0.078)	0.236	(0.032)	BN	24	BN	22	BN	31
M003706	0.689	(0.036)	0.294	(0.035)	0.0	(0.0)	BN	25	BN	23	BN	32
M003801	0.891	(0.112)	1.465	(0.251)	0.309	(0.018)	BO	12	BO	12	BO	12
M003802	0.414	(0.030)	-0.703	(0.078)	0.110	(0.047)	BO	13	BO	13	BO	13
M003803	0.757	(0.093)	1.600	(0.245)	0.206	(0.019)	BO	14	BO	14	BO	14
M003901	1.375	(0.192)	-1.847	(0.331)	0.232	(0.089)			BO	16		
M004002	0.615	(0.079)	-1.426	(0.214)	0.246	(0.093)			BO	15		
M004101	1.096	(0.087)	-1.122	(0.114)	0.229	(0.054)	BO	17	BO	17		
M004201	1.103	(0.071)	0.031	(0.062)	0.185	(0.024)	BO	18	BO	18	BO	21
M004202	0.762	(0.072)	0.187	(0.098)	0.291	(0.038)	BO	19	BO	19	BO	22
M004301	1.420	(0.125)	0.404	(0.131)	0.288	(0.032)			BO	20	BO	23
M004305	0.621	(0.043)	0.582	(0.056)	0.0	(0.0)			BO	21	BO	24

BIB SAMPLE: ALL GRADES/AGES

FIELD	A	SE	B	SE	C	SE	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N004401	1.718	(0.127)	-1.774	(0.202)	0.262	(0.065)	BP	7	BP	7		
N004402	0.876	(0.075)	-0.220	(0.066)	0.148	(0.036)	BP	8	BP	8		
N004403	1.642	(0.128)	-1.467	(0.170)	0.228	(0.054)	BP	9	BP	9		
N004501	0.974	(0.103)	0.493	(0.151)	0.305	(0.043)			BP	10	BP	20
N004502	0.680	(0.054)	-0.824	(0.105)	0.180	(0.068)			BP	11	BP	21
N004601	0.899	(0.078)	0.179	(0.104)	0.184	(0.048)			BP	12	BP	22
N004602	1.318	(0.103)	-0.085	(0.092)	0.249	(0.044)			BP	13	BP	23
N004603	1.485	(0.113)	-0.516	(0.089)	0.226	(0.054)			BP	14	BP	24
N004607	0.797	(0.049)	-0.617	(0.051)	0.0	(0.0)			BP	15	BP	25
N004701	1.694	(0.101)	-0.515	(0.059)	0.204	(0.021)	BQ	10	BQ	7		
N004702	0.764	(0.065)	-0.928	(0.105)	0.237	(0.057)	BQ	11	BQ	8		
N004703	1.021	(0.065)	-0.651	(0.062)	0.153	(0.031)	BQ	12	BQ	9		
N004801	1.257	(0.085)	-1.258	(0.108)	0.242	(0.047)	BQ	13	BQ	10		
N004901	0.916	(0.057)	0.221	(0.060)	0.190	(0.021)	BQ	14	BQ	11	BQ	10
N005001	1.993	(0.102)	1.380	(0.159)	0.211	(0.011)			BQ	13	BQ	7
N005002	0.859	(0.108)	1.288	(0.240)	0.264	(0.029)			BQ	14	BQ	8
N005003	0.737	(0.105)	1.905	(0.331)	0.135	(0.024)			BQ	15	BQ	9
N005101	0.842	(0.061)	-2.140	(0.178)	0.236	(0.083)	BQ	15	BQ	12		
N005201	0.674	(0.107)	0.636	(0.230)	0.481	(0.054)			BQ	16	BQ	11
N005202	0.600	(0.071)	0.582	(0.152)	0.206	(0.058)			BQ	17	BQ	12
N005203	1.143	(0.121)	1.837	(0.284)	0.309	(0.015)			BQ	18	BQ	13
N005301	1.133	(0.146)	-0.028	(0.132)	0.283	(0.059)			BQ	19		
N005302	1.406	(0.145)	0.387	(0.119)	0.129	(0.030)			BQ	20		
N005303	0.867	(0.195)	1.008	(0.344)	0.330	(0.048)			BQ	21		
N005304	1.810	(0.197)	0.052	(0.114)	0.227	(0.038)			BQ	22		
N005305	1.086	(0.121)	-0.677	(0.130)	0.222	(0.077)			BQ	23		
N005403	1.347	(0.153)	-0.335	(0.115)	0.289	(0.061)			BR	7		
N005404	1.455	(0.138)	-1.037	(0.144)	0.187	(0.067)			BR	8		
N005405	2.018	(0.195)	0.068	(0.100)	0.206	(0.031)			BR	9		
N005406	1.210	(0.116)	-0.398	(0.094)	0.185	(0.054)			BR	10		
N005407	1.777	(0.201)	-0.246	(0.110)	0.326	(0.049)			BR	11		
N005503	0.718	(0.074)	0.356	(0.127)	0.211	(0.054)			BR	14	BR	14
N005504	1.316	(0.112)	0.778	(0.147)	0.219	(0.024)			BR	15	BR	15
N005505	1.126	(0.092)	-0.913	(0.121)	0.247	(0.079)			BR	16	BR	16
N005601	1.387	(0.151)	-0.653	(0.125)	0.253	(0.071)			BR	17		
N005602	1.715	(0.187)	0.297	(0.133)	0.208	(0.031)			BR	18		
N005603	1.487	(0.171)	-0.177	(0.113)	0.306	(0.051)			BR	19		
N007301	1.183	(0.091)	-0.394	(0.100)	0.278	(0.059)			BU	19	BU	19
N007302	0.818	(0.059)	0.285	(0 084)	0.136	(0.039)			BU	20	BU	20
N007303	1.110	(0.077)	-0.024	(0.084)	0.196	(0.043)			BU	21	BU	21
N007304	0.887	(0.072)	-0.007	(0.100)	0.223	(0.053)			BU	22	BU	22
N007305	0.529	(0.042)	0.010	(0.077)	0.133	(0.050)			BU	23	BU	23
N007306	1.009	(0.057)	-0.116	(0.059)	0.103	(0.035)			BU	24	BU	24
N007401	1.098	(0.076)	0.531	(0.096)	0.123	(0.027)			BU	25	BU	25
N007402	1.304	(0.084)	-0.317	(0.075)	0.176	(0.045)			BU	26	BU	26
N007403	1.756	(0.119)	0.214	(0.093)	0.233	(0.027)			BU	27	BU	27
N007404	0.985	(0.072)	0.060	(0.088)	0.181	(0.044)			BU	28	BU	28
N007405	0.887	(0.102)	1.401	(0.229)	0.187	(0.025)			BU	29	BU	29
N007410	0.851	(0.042)	0.671	(0.049)	0.0	(0.0)			BU	31	BU	31
N008201	2.724	(0.302)	-0.471	(0.131)	0.323	(0.052)			BY	4	BY	6
N008202	1.146	(0.102)	-0.065	(0.102)	0.188	(0.052)			BY	5	BY	7
N008203	1.543	(0.141)	-0.289	(0.104)	0.247	(0.054)			BY	6	BY	8
N008204	2.600	(0.236)	-0.228	(0.092)	0.209	(0.038)			BY	7	BY	9
N008205	2.145	(0.188)	-0.256	(0.092)	0.205	(0.042)			BY	8	BY	10
N008210	0.598	(0.060)	2.259	(0.237)	0.0	(0.0)			BY	10	BY	12
N008601	1.789	(0.179)	-0.972	(0.171)	0.169	(0.037)	BH	6				
N008602	1.368	(0.179)	-0.554	(0.122)	0.261	(0.041)	BH	7				
N008603	1.206	(0.118)	-0.985	(0.137)	0.140	(0.043)	BH	8				
N008701	1.192	(0.134)	-2.390	(0.342)	0.240	(0.088)	BH	9				
N008801	1.489	(0.100)	-1.789	(0.173)	0.194	(0.056)	BJ	18				
N008901	1.328	(0.106)	-1.244	(0.138)	0.148	(0.041)	BJ	21				
N008902	1.258	(0.102)	-1.271	(0.140)	0.156	(0.043)	BJ	22				
N008907	0.673	(0.064)	-2.509	(0.256)	0.0	(0.0)	BJ	24				
N009001	1.328	(0.152)	-0.433	(0.097)	0.154	(0.031)	BK	12				
N009002	1.177	(0.163)	-0.093	(0.087)	0.178	(0.030)	BK	13				
N009003	0.844	(0.203)	0.755	(0.242)	0.226	(0.032)	BK	14				
N009004	1.768	(0.225)	-0.350	(0.109)	0.240	(0.027)	BK	15				
N009101	1.007	(0.120)	-1.451	(0.210)	0.256	(0.076)	BK	16				
N009201	1.795	(0.172)	-1.377	(0.216)	0.301	(0.054)	BK	17				
N009401	1.882	(0.127)	-1.402	(0.172)	0.105	(0.036)	BL	23				

BIB SAMPLE: ALL GRADES/AGES

FIELD	A	SE	B	SE	C	SE	AGE 9 BLOCK	ITEM	AGE 13 BLOCK	ITEM	AGE 17 BLOCK	ITEM
N009601	1.360	(0.106)	-1.872	(0.207)	0.130	(0.053)	BL	21				
N009701	1.082	(0.124)	-0.654	(0.112)	0.164	(0.041)	BM	5				
N009702	1.959	(0.227)	-0.533	(0.131)	0.249	(0.028)	BM	6				
N009703	1.449	(0.211)	-0.165	(0.097)	0.258	(0.029)	BM	7				
N009704	1.150	(0.185)	0.033	(0.096)	0.209	(0.031)	BM	8				
N009705	1.957	(0.207)	-0.702	(0.147)	0.211	(0.029)	BM	9				
N009801	1.396	(0.134)	-2.227	(0.296)	0.259	(0.086)	BN	12				
N009901	0.976	(0.117)	-1.049	(0.160)	0.206	(0.059)	BN	13				
N010002	1.290	(0.137)	-1.094	(0.165)	0.172	(0.047)	BN	18				
N010003	1.657	(0.194)	-0.940	(0.179)	0.241	(0.042)	BN	19				
N010102	1.124	(0.193)	-0.050	(0.111)	0.267	(0.037)	BN	21				
N010103	1.795	(0.200)	-1.075	(0.207)	0.209	(0.042)	BN	22				
N010201	1.243	(0.121)	-1.932	(0.245)	0.244	(0.078)	BO	16				
N010301	0.702	(0.085)	-2.383	(0.318)	0.248	(0.093)	BO	15				
N010401	0.715	(0.087)	-1.487	(0.209)	0.219	(0.077)	BO	20				
N010402	0.928	(0.171)	0.132	(0.113)	0.222	(0.037)	BO	21				
N010403	1.031	(0.197)	0.465	(0.153)	0.190	(0.027)	BO	22				
N010501	2.023	(0.139)	-1.490	(0.190)	0.204	(0.046)	BP	10				
N010502	1.204	(0.114)	-1.196	(0.154)	0.156	(0.049)	BP	11				
N010503	1.455	(0.123)	-1.460	(0.184)	0.159	(0.048)	BP	12				
N010504	2.300	(0.166)	-1.114	(0.174)	0.182	(0.032)	BP	13				
N010601	1.604	(0.196)	-0.634	(0.136)	0.246	(0.036)	BP	14				
N010602	1.788	(0.344)	0.209	(0.153)	0.306	(0.023)	BP	15				
N010603	1.359	(0.199)	-0.258	(0.105)	0.234	(0.033)	BP	16				
N010604	1.637	(0.250)	-0.101	(0.106)	0.235	(0.026)	BP	17				
N010605	1.220	(0.190)	-0.069	(0.098)	0.184	(0.031)	BP	18				
N010701	1.064	(0.122)	-1.283	(0.188)	0.179	(0.063)	BP	19				
N010801	1.084	(0.119)	-0.471	(0.087)	0.260	(0.035)	BQ	16				
N010902	1.564	(0.153)	-0.467	(0.087)	0.241	(0.026)	BQ	18				
N010903	1.850	(0.157)	-0.564	(0.096)	0.193	(0.022)	BQ	19				
N010904	1.522	(0.170)	-0.245	(0.080)	0.275	(0.024)	BQ	20				
N011001	1.279	(0.116)	-0.879	(0.113)	0.228	(0.037)	BR	5				
N011002	1.657	(0.167)	-0.315	(0.081)	0.252	(0.022)	BR	6				
N011003	2.416	(0.169)	-0.928	(0.147)	0.241	(0.024)	BR	7				
N011004	1.788	(0.159)	-0.543	(0.097)	0.226	(0.023)	BR	8				
N011101	1.568	(0.141)	-0.541	(0.090)	0.197	(0.025)	BR	9				
N011201	0.911	(0.117)	-0.259	(0.085)	0.260	(0.037)	BR	10				
N011301	1.653	(0.143)	-0.756	(0.111)	0.211	(0.028)	BR	11				
N011302	0.992	(0.119)	-0.430	(0.089)	0.227	(0.039)	BR	12				
N011401	0.838	(0.194)	0.697	(0.227)	0.334	(0.030)	BR	13				
N011402	0.822	(0.139)	0.010	(0.102)	0.288	(0.041)	BR	14				
N011403	0.971	(0.192)	0.621	(0.186)	0.270	(0.025)	BR	15				
N011404	1.327	(0.215)	0.492	(0.151)	0.220	(0.019)	BR	16				
N012901	1.091	(0.091)	-1.601	(0.169)	0.136	(0.053)	BU	19				
N013001	1.020	(0.122)	-0.343	(0.083)	0.165	(0.036)	BU	20				
N013002	0.972	(0.121)	-0.383	(0.090)	0.187	(0.040)	BU	21				
N013003	1.717	(0.164)	-1.123	(0.172)	0.234	(0.041)	BU	22				
N013004	0.994	(0.115)	-0.946	(0.138)	0.216	(0.056)	BU	23				
N013101	1.757	(0.136)	-1.560	(0.196)	0.215	(0.052)	BU	24				
N013102	1.401	(0.146)	-0.789	(0.124)	0.218	(0.039)	BU	25				
N013103	0.954	(0.097)	-0.868	(0.117)	0.147	(0.046)	BU	26				
N013104	0.760	(0.116)	-0.421	(0.111)	0.216	(0.055)	BU	27				
N013201	1.665	(0.211)	-0.693	(0.160)	0.181	(0.037)	BV	29				
N013301	1.232	(0.161)	-1.557	(0.268)	0.253	(0.077)	BV	30				
N013401	1.203	(0.177)	-0.250	(0.107)	0.157	(0.035)	BV	31				
N013402	1.438	(0.189)	-0.862	(0.175)	0.205	(0.048)	BV	32				
N013403	1.494	(0.223)	-0.278	(0.116)	0.199	(0.033)	BV	33				
N014001	1.238	(0.153)	-0.857	(0.149)	0.249	(0.048)	BM	13				
N014101	0.758	(0.071)	-1.283	(0.142)	0.169	(0.059)	BQ	21				
N014201	1.207	(0.134)	-1.218	(0.189)	0.136	(0.052)	BV	34				
N014301	1.755	(0.191)	-0.820	(0.158)	0.190	(0.035)	BN	14				
N014302	1.074	(0.136)	-0.498	(0.108)	0.181	(0.041)	BN	15				
N014303	1.721	(0.187)	-1.041	(0.188)	0.208	(0.041)	BN	16				
N014501	0.432	(0.065)	-2.264	(0.348)	0.0	(0.0)	BV	35				
N014502	0.934	(0.123)	-2.664	(0.406)	0.0	(0.0)	BV	35				
N014503	0.624	(0.133)	-4.120	(0.903)	0.0	(0.0)	BV	35				
N015101	0.932	(0.110)	0.343	(0.168)	0.234	(0.067)					BR	17
N015102	2.533	(0.236)	0.548	(0.207)	0.216	(0.030)					BR	18
N015103	2.401	(0.200)	0.660	(0.197)	0.219	(0.028)					BR	19
N015104	1.707	(0.184)	0.441	(0.193)	0.278	(0.045)					BR	20

BIB SAMPLE: ALL GRADES/AGES

FIELD	A	SE	B	SE	C	SE	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
M015201	1.089	(0.126)	-0.766	(0.150)	0.227	(0.085)						
M015502	1.273	(0.126)	0.189	(0.140)	0.209	(0.057)					BN	26
M015503	0.912	(0.119)	0.756	(0.216)	0.247	(0.056)					BP	16
M015504	1.189	(0.121)	0.110	(0.138)	0.220	(0.062)					BP	17
M015505	0.683	(0.083)	-0.175	(0.146)	0.247	(0.087)					BP	18
M015901	1.021	(0.133)	0.371	(0.204)	0.333	(0.068)					BP	19
M015902	1.380	(0.165)	0.726	(0.234)	0.317	(0.043)					BQ	14
M015903	1.182	(0.129)	1.101	(0.224)	0.153	(0.032)					BQ	15
M015907	0.657	(0.062)	0.858	(0.106)	0.0	(0.0)					BQ	16
M016001	1.043	(0.122)	0.033	(0.164)	0.285	(0.078)					BQ	17
M016002	1.386	(0.154)	1.247	(0.276)	0.456	(0.028)					BO	15
M016003	0.906	(0.103)	0.354	(0.157)	0.205	(0.065)					BO	16
M016004	1.095	(0.126)	0.103	(0.165)	0.271	(0.074)					BO	17
M016005	1.734	(0.175)	0.156	(0.152)	0.230	(0.054)					BO	18
M016006	1.357	(0.137)	0.424	(0.161)	0.203	(0.049)					BO	19
M017001	1.518	(0.157)	0.484	(0.175)	0.213	(0.042)					BO	20
M017002	1.935	(0.138)	1.100	(0.193)	0.196	(0.022)					BH	7
M017003	1.833	(0.129)	1.770	(0.248)	0.177	(0.016)					BH	8
											BH	9

APPENDIX 1
IRT PARAMETERS

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M A E P

PACE SAMPLES: AGE 9

FIELD	A	SE	B	SE	C	SE	AGE 9 BLOCK	ITEM
M001501	1.809	(0.195)	-1.822	(0.161)	0.187	(0.051)	P3	1
M001502	1.843	(0.210)	-0.493	(0.113)	0.201	(0.028)	P3	2
M001503	1.439	(0.104)	-1.348	(0.064)	0.182	(0.038)	P3	3
M001504	1.565	(0.189)	-0.477	(0.115)	0.228	(0.031)	P3	4
M001601	0.811	(0.065)	-1.265	(0.064)	0.157	(0.043)	P3	8
M001602	1.106	(0.097)	-0.788	(0.063)	0.195	(0.035)	P3	9
M001603	0.698	(0.110)	-0.167	(0.148)	0.191	(0.046)	P3	10
M001604	0.943	(0.126)	0.157	(0.172)	0.205	(0.027)	P3	11
M001802	1.457	(0.151)	0.968	(0.252)	0.217	(0.008)	P4	15
M002001	0.819	(0.087)	-0.022	(0.112)	0.128	(0.027)	P2	10
M002002	1.183	(0.117)	-0.245	(0.100)	0.194	(0.025)	P2	11
M002003	1.275	(0.152)	-0.531	(0.094)	0.165	(0.033)	P2	12
M002101	0.960	(0.174)	1.290	(0.435)	0.210	(0.013)	P4	5
M002102	0.863	(0.304)	2.179	(1.141)	0.167	(0.017)	P4	6
M002401	1.456	(0.083)	-0.373	(0.053)	0.114	(0.013)	P2	7
M002501	1.046	(0.200)	0.364	(0.287)	0.186	(0.027)	P2	13
M003001	0.941	(0.251)	2.100	(0.851)	0.147	(0.009)	P3	14
M003002	0.434	(0.041)	-0.053	(0.090)	0.109	(0.034)	P3	15
M003003	0.453	(0.185)	5.708	(2.669)	0.124	(0.011)	P3	16
M003801	1.136	(0.189)	1.105	(0.388)	0.246	(0.011)	P4	2
M003802	0.592	(0.079)	-0.624	(0.080)	0.151	(0.048)	P4	3
M003803	0.681	(0.235)	2.407	(1.167)	0.203	(0.021)	P4	4
M004101	1.173	(0.051)	-1.292	(0.038)	0.197	(0.028)	P4	16
M004201	0.960	(0.146)	0.081	(0.186)	0.178	(0.034)	P4	12
M004202	0.521	(0.104)	0.029	(0.208)	0.224	(0.056)	P4	13
M004401	1.335	(0.107)	-2.138	(0.132)	0.177	(0.050)	P4	9
M004402	1.649	(0.233)	-0.051	(0.198)	0.211	(0.024)	P4	10
M004403	1.046	(0.107)	-1.550	(0.102)	0.179	(0.051)	P4	11
M004701	1.084	(0.123)	-0.862	(0.078)	0.191	(0.045)	P1	15
M004702	0.760	(0.089)	-1.184	(0.084)	0.185	(0.053)	P1	16
M004703	1.126	(0.128)	-0.721	(0.080)	0.178	(0.041)	P1	17
M004801	1.105	(0.111)	-1.576	(0.104)	0.180	(0.051)	P3	19
M004901	1.349	(0.135)	0.464	(0.182)	0.209	(0.013)	P3	17
M005101	1.128	(0.129)	-2.239	(0.190)	0.181	(0.054)	P2	2
M008602	1.207	(0.149)	-0.757	(0.085)	0.208	(0.041)	P2	16
M008603	1.252	(0.083)	-1.201	(0.051)	0.128	(0.031)	P2	17
M009101	1.200	(0.070)	-1.996	(0.084)	0.188	(0.047)	P3	18
M009201	1.453	(0.085)	-1.755	(0.073)	0.220	(0.042)	P3	28
M009601	1.041	(0.058)	-1.869	(0.074)	0.160	(0.046)	P1	8
M010002	0.978	(0.104)	-1.225	(0.081)	0.179	(0.049)	P1	6
M010003	1.416	(0.146)	-1.132	(0.077)	0.187	(0.045)	P1	7
M010102	1.233	(0.159)	-0.390	(0.119)	0.206	(0.035)	P1	10
M010103	1.643	(0.162)	-1.443	(0.098)	0.180	(0.045)	P1	11
M010201	1.794	(0.197)	-1.920	(0.178)	0.183	(0.051)	P3	20
M010301	0.864	(0.103)	-2.346	(0.201)	0.178	(0.054)	P2	9
M010501	1.852	(0.192)	-1.763	(0.151)	0.172	(0.047)	P2	3
M010502	1.209	(0.084)	-1.399	(0.062)	0.136	(0.035)	P2	4
M010503	1.663	(0.127)	-1.542	(0.082)	0.185	(0.039)	P2	5
M010504	1.960	(0.132)	-1.346	(0.065)	0.126	(0.027)	P2	6
M010801	0.850	(0.084)	-0.746	(0.069)	0.195	(0.041)	P3	29
M011101	1.114	(0.126)	-0.926	(0.079)	0.196	(0.047)	P1	36
M011301	1.734	(0.140)	-0.933	(0.059)	0.240	(0.030)	P3	21
M011302	1.032	(0.100)	-0.640	(0.074)	0.219	(0.035)	P3	22
M013101	1.044	(0.080)	-1.854	(0.098)	0.186	(0.051)	P1	1
M013102	1.173	(0.093)	-0.908	(0.056)	0.178	(0.034)	P1	2
M013103	0.979	(0.081)	-0.729	(0.057)	0.158	(0.033)	P1	3
M013104	0.910	(0.122)	-0.527	(0.103)	0.205	(0.046)	P1	4
M013201	1.921	(0.186)	-0.703	(0.078)	0.148	(0.028)	P4	17
M013301	1.348	(0.068)	-1.922	(0.072)	0.132	(0.035)	P1	14
M013501	1.375	(0.143)	-1.147	(0.079)	0.194	(0.045)	P4	7
M013502	1.252	(0.108)	-0.730	(0.065)	0.211	(0.032)	P4	8
M014001	1.258	(0.074)	-1.289	(0.050)	0.216	(0.034)	P2	14

PACE SAMPLES: AGE 13

FIELD	A	SE	B	SE	C	SE	AGE 13 BLOCK	ITEM
M001201	0.537	(0.111)	1.351	(0.288)	0.360	(0.039)	P3	26
M001202	1.444	(0.235)	0.659	(0.167)	0.280	(0.035)	P3	27
M001401	1.149	(0.079)	-0.270	(0.052)	0.266	(0.038)	P3	21
M001601	0.531	(0.058)	-1.122	(0.143)	0.216	(0.057)	P3	8
M001602	1.653	(0.121)	-0.632	(0.074)	0.183	(0.040)	P3	9
M001603	1.102	(0.161)	0.070	(0.091)	0.301	(0.054)	P3	10
M001604	1.368	(0.102)	-0.132	(0.047)	0.161	(0.033)	P3	11
M001701	1.194	(0.071)	-0.533	(0.053)	0.210	(0.039)	P2	3
M001702	0.652	(0.215)	2.614	(0.870)	0.231	(0.029)	P2	4
M001703	0.901	(0.110)	-0.437	(0.093)	0.221	(0.056)	P2	5
M001802	1.025	(0.080)	0.452	(0.061)	0.181	(0.027)	P4	21
M002001	1.422	(0.153)	-0.222	(0.071)	0.197	(0.045)	P2	11
M002002	1.238	(0.137)	-0.247	(0.074)	0.204	(0.048)	P2	12
M002003	1.234	(0.135)	-0.488	(0.090)	0.208	(0.051)	P2	13
M002101	0.870	(0.088)	0.903	(0.107)	0.190	(0.025)	P4	5
M002102	1.075	(0.158)	0.734	(0.135)	0.144	(0.034)	P4	6
M002201	2.269	(0.127)	-0.135	(0.039)	0.265	(0.022)	P2	14
M002202	2.280	(0.151)	-0.198	(0.048)	0.265	(0.025)	P2	15
M002203	1.219	(0.072)	-0.900	(0.073)	0.209	(0.047)	P2	16
M002504	0.759	(0.069)	0.277	(0.058)	0.176	(0.038)	P2	17
M003001	0.950	(0.127)	1.304	(0.191)	0.159	(0.021)	P3	15
M003002	0.492	(0.050)	0.081	(0.054)	0.149	(0.047)	P3	16
M003003	1.428	(0.266)	2.223	(0.482)	0.108	(0.007)	P3	17
M003201	1.750	(0.191)	-0.515	(0.097)	0.212	(0.047)	P1	7
M003202	1.813	(0.206)	-0.082	(0.071)	0.231	(0.040)	P1	8
M003203	1.467	(0.179)	0.083	(0.076)	0.236	(0.042)	P1	9
M003204	1.326	(0.194)	0.517	(0.127)	0.262	(0.038)	P1	10
M003301	1.121	(0.120)	-0.512	(0.088)	0.182	(0.047)	P3	19
M003501	0.687	(0.053)	-0.756	(0.080)	0.205	(0.051)	P2	10
M003601	1.584	(0.099)	-1.027	(0.090)	0.185	(0.044)	P1	13
M003602	1.548	(0.098)	-0.386	(0.050)	0.210	(0.035)	P1	14
M003801	0.736	(0.080)	0.724	(0.097)	0.180	(0.035)	P4	2
M003802	0.317	(0.060)	-1.321	(0.274)	0.150	(0.052)	P4	3
M003803	0.680	(0.212)	2.208	(0.696)	0.247	(0.033)	P4	4
M003901	1.349	(0.205)	-1.778	(0.326)	0.215	(0.058)	P3	14
M004101	1.178	(0.056)	-1.117	(0.070)	0.226	(0.049)	P4	22
M004201	1.328	(0.164)	0.058	(0.074)	0.233	(0.044)	P4	18
M004202	0.601	(0.087)	-0.287	(0.087)	0.212	(0.055)	P4	19
M004401	1.593	(0.195)	-1.964	(0.313)	0.212	(0.057)	P4	15
M004402	1.099	(0.129)	-0.218	(0.075)	0.213	(0.050)	P4	16
M004403	1.573	(0.203)	-1.444	(0.247)	0.211	(0.056)	P4	17
M004701	1.563	(0.177)	-0.829	(0.134)	0.224	(0.054)	P1	15
M004702	1.000	(0.116)	-0.921	(0.136)	0.209	(0.055)	P1	16
M004703	1.228	(0.131)	-0.642	(0.101)	0.191	(0.049)	P1	17
M004801	1.823	(0.210)	-0.941	(0.161)	0.207	(0.052)	P3	20
M004901	1.181	(0.075)	0.183	(0.042)	0.186	(0.025)	P3	18
M005001	1.447	(0.345)	1.816	(0.537)	0.202	(0.018)	P2	6
M005002	1.054	(0.146)	1.368	(0.216)	0.282	(0.019)	P2	7
M005003	1.261	(0.165)	1.687	(0.254)	0.142	(0.011)	P2	8
M005101	0.614	(0.129)	-2.983	(0.656)	0.224	(0.060)	P2	2
M005201	0.843	(0.176)	1.076	(0.259)	0.552	(0.028)	P4	23
M005203	0.942	(0.214)	1.985	(0.476)	0.261	(0.017)	P4	25
M007301	1.170	(0.104)	-0.513	(0.078)	0.267	(0.052)	P1	1
M007302	1.683	(0.157)	0.370	(0.078)	0.256	(0.025)	P1	2
M007303	1.103	(0.098)	-0.045	(0.056)	0.205	(0.040)	P1	3
M007304	1.146	(0.103)	0.000	(0.056)	0.209	(0.039)	P1	4
M007305	0.820	(0.080)	0.016	(0.057)	0.195	(0.043)	P1	5
M007306	1.289	(0.094)	-0.034	(0.044)	0.142	(0.030)	P1	6
M008201	2.034	(0.234)	-0.932	(0.171)	0.194	(0.050)	P3	1
M008202	1.086	(0.128)	-0.104	(0.070)	0.208	(0.048)	P3	2
M008203	1.381	(0.153)	-0.711	(0.114)	0.213	(0.053)	P3	3
M008204	1.857	(0.189)	-0.396	(0.082)	0.182	(0.042)	P3	4
M008205	2.591	(0.297)	-0.359	(0.097)	0.240	(0.042)	P3	5

PACE SAMPLES: AGE 17

FIELD	A	SE	B	SE	C	SE	AGE 17 BLOCK	ITEM
N001201	0.665	(0.090)	1.347	(0.155)	0.381	(0.034)	P3	26
N001202	1.016	(0.118)	0.557	(0.093)	0.239	(0.047)	P3	27
N001401	1.018	(0.063)	-0.232	(0.068)	0.255	(0.038)	P3	21
N001603	1.233	(0.147)	0.223	(0.105)	0.340	(0.055)	P3	10
N001701	0.887	(0.056)	-0.928	(0.109)	0.251	(0.052)	P2	3
N001702	0.833	(0.190)	1.897	(0.376)	0.286	(0.035)	P2	4
N001703	1.064	(0.130)	-0.200	(0.128)	0.308	(0.060)	P2	5
N002001	0.991	(0.110)	-0.331	(0.127)	0.255	(0.057)	P2	11
N002002	1.223	(0.139)	-0.242	(0.123)	0.265	(0.055)	P2	12
N002003	1.042	(0.115)	-0.577	(0.151)	0.245	(0.056)	P2	13
N002101	0.934	(0.065)	0.714	(0.055)	0.227	(0.026)	P4	5
N002102	1.204	(0.123)	0.554	(0.077)	0.173	(0.039)	P4	6
N002201	1.976	(0.108)	-0.209	(0.067)	0.222	(0.028)	P2	14
N002202	1.839	(0.107)	-0.412	(0.083)	0.240	(0.033)	P2	15
N002203	1.063	(0.064)	-1.071	(0.115)	0.224	(0.048)	P2	16
N002501	0.487	(0.039)	-0.234	(0.088)	0.222	(0.050)	P2	17
N003001	1.166	(0.081)	1.059	(0.072)	0.172	(0.019)	P3	15
N003002	0.365	(0.035)	0.599	(0.055)	0.187	(0.039)	P3	16
N003003	1.276	(0.084)	1.601	(0.100)	0.066	(0.010)	P3	17
N003201	1.328	(0.163)	-0.922	(0.223)	0.258	(0.059)	P1	7
N003202	0.856	(0.102)	-0.660	(0.168)	0.265	(0.061)	P1	8
N003203	0.958	(0.106)	-0.149	(0.112)	0.258	(0.057)	P1	9
N003204	1.082	(0.125)	-0.452	(0.146)	0.281	(0.061)	P1	10
N003301	1.123	(0.135)	-0.843	(0.198)	0.266	(0.060)	P3	19
N003501	0.540	(0.039)	-0.764	(0.111)	0.230	(0.052)	P2	10
N003601	0.971	(0.066)	-1.596	(0.164)	0.245	(0.055)	P1	13
N003602	1.284	(0.083)	-0.345	(0.078)	0.310	(0.039)	P1	14
N003801	0.745	(0.061)	0.856	(0.063)	0.132	(0.031)	P4	2
N003802	0.238	(0.048)	-1.525	(0.427)	0.206	(0.059)	P4	3
N003803	0.602	(0.133)	1.659	(0.296)	0.284	(0.048)	P4	4
N003901	1.709	(0.324)	-1.582	(0.581)	0.256	(0.060)	P3	14
N004201	1.356	(0.145)	-0.028	(0.103)	0.272	(0.052)	P4	18
N004202	1.023	(0.113)	-0.098	(0.108)	0.260	(0.056)	P4	19
N004402	1.118	(0.122)	-0.363	(0.131)	0.266	(0.058)	P4	16
N004403	1.319	(0.212)	-1.596	(0.424)	0.260	(0.061)	P4	17
N004801	1.454	(0.200)	-1.123	(0.297)	0.262	(0.061)	P3	20
N004901	1.061	(0.065)	0.133	(0.053)	0.225	(0.032)	P3	18
N005001	1.427	(0.177)	1.110	(0.153)	0.228	(0.031)	P2	6
N005002	1.022	(0.080)	0.999	(0.078)	0.240	(0.024)	P2	7
N005003	0.686	(0.063)	1.553	(0.116)	0.126	(0.023)	P2	8
N005101	0.449	(0.104)	-3.696	(0.995)	0.272	(0.064)	P2	2
N005201	0.748	(0.081)	0.411	(0.092)	0.497	(0.040)	P4	23
N005203	0.620	(0.079)	1.524	(0.154)	0.246	(0.030)	P4	25
N007301	1.070	(0.101)	-0.500	(0.128)	0.395	(0.060)	P1	1
N007302	1.533	(0.150)	0.848	(0.107)	0.427	(0.024)	P1	2
N007303	2.163	(0.201)	0.460	(0.079)	0.453	(0.024)	P1	3
N007304	1.206	(0.085)	0.069	(0.062)	0.196	(0.034)	P1	4
N007305	0.720	(0.059)	0.283	(0.061)	0.183	(0.038)	P1	5
N007306	1.358	(0.084)	0.094	(0.052)	0.128	(0.025)	P1	6
N008108	1.419	(0.160)	0.872	(0.110)	0.216	(0.033)	P4	14
N008201	1.381	(0.177)	-1.045	(0.259)	0.246	(0.058)	P3	1
N008202	0.946	(0.104)	-0.143	(0.110)	0.243	(0.055)	P3	2
N008203	1.391	(0.151)	-0.511	(0.153)	0.239	(0.054)	P3	3
N008204	1.095	(0.125)	-0.673	(0.169)	0.257	(0.059)	P3	4
N008205	2.225	(0.261)	-0.330	(0.182)	0.261	(0.051)	P3	5

Appendix 2

Item Usage

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N000102	DALI: PRIMARY TRAIT SCORE (RATER 1)	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000103	DALI: PRIMARY TRAIT SCORE (RATER 2)	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000104	DALI: PRIMARY TRAIT SCORE	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000105	DALI: PRIMARY TRAIT: FIRST RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000106	DALI: PRIMARY TRAIT: SECOND RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000107	DALI: PRIMARY TRAIT: RESOL. RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000108	DALI: HOLISTIC SCORE (RATER 1)	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000109	DALI: HOLISTIC SCORE (RATER 2)	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000110	DALI: HOLISTIC SCORE	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000111	DALI: FIRST HOLISTIC RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000112	DALI: SECOND HOLISTIC RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000113	DALI: RESOLUTION HOLISTIC RATER ID	BA	13	BA	13	BA	13
		P2	1	P2	1	P2	1
N000202	SCHOOL RULE: PRIMARY TRAIT SCORE (RATER 1)	BB	16	BB	16	BB	16
N000203	SCHOOL RULE: PRIMARY TRAIT SCORE (RATER 2)	BB	16	BB	16	BB	16
N000204	SCHOOL RULE: PRIMARY TRAIT SCORE	BB	16	BB	16	BB	16
N000205	SCHOOL RULE: PRIMARY TRAIT: FIRST RATER ID	BB	16	BB	16	BB	16
N000206	SCHOOL RULE: PRIMARY TRAIT: SECOND RATER ID	BB	16	BB	16	BB	16
N000207	SCHOOL RULE: PRIMARY TRAIT: RESOL. RATER ID	BB	16	BB	16	BB	16
N000302	RECREATION OPP: PRIMARY TRAIT SCORE (RATER 1)			BC	23	BC	23
N000303	RECREATION OPP: PRIMARY TRAIT SCORE (RATER 2)			BC	23	BC	23
N000304	RECREATION OPP: PRIMARY TRAIT SCORE			BC	23	BC	23
N000305	RECREATION OPP: SECONDARY TRAIT: MADE NOTES			BC	23	BC	23
N000306	RECREATION OPP: PRIMARY TRAIT: FIRST RATER ID			BC	23	BC	23
N000307	RECREATION OPP: PRIMARY TRAIT: SECOND RATER ID			BC	23	BC	23
N000308	RECREATION OPP: PRIMARY TRAIT: RESOL. RATER ID			BC	23	BC	23
N000402	FOOD ON FRONTIER: PRIMARY TRAIT SCORE (RATER 1)	BD	25	BD	25	BD	25
N000403	FOOD ON FRONTIER: PRIMARY TRAIT SCORE (RATER 2)	BD	25	BD	25	BD	25
N000404	FOOD ON FRONTIER: PRIMARY TRAIT SCORE	BD	25	BD	25	BD	25
N000405	FOOD ON FRONTIER: PRIMARY TRAIT: FIRST RATER ID	BD	25	BD	25	BD	25
N000406	FOOD ON FRONTIER: PRIMARY TRAIT: SECOND RATER ID	BD	25	BD	25	BD	25

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N000407	FOOD ON FRONTIER: PRIMARY TRAIT: RESOL. RATER ID	BD	25	BD	25	BD	25
N000502	DISSECTING FROGS: PRIMARY TRAIT SCORE (RATER 1)			BE	10		
N000503	DISSECTING FROGS: PRIMARY TRAIT SCORE (RATER 2)			BE	10		
N000504	DISSECTING FROGS: PRIMARY TRAIT SCORE			BE	10		
N000505	DISSECTING FROGS: PRIMARY TRAIT: FIRST RATER ID			BE	10		
N000506	DISSECTING FROGS: PRIMARY TRAIT: SECOND RATER ID			BE	10		
N000507	DISSECTING FROGS: PRIMARY TRAIT: RESOL. RATER ID			BE	10		
N000602	XYZ COMPANY: PRIMARY TRAIT SCORE (RATER 1)	BE	11	BE	11		
N000603	XYZ COMPANY: PRIMARY TRAIT SCORE (RATER 2)	BE	11	BE	11		
N000604	XYZ COMPANY: PRIMARY TRAIT SCORE	BE	11	BE	11		
N000605	XYZ COMPANY: PRIMARY TRAIT: FIRST RATER ID	BE	11	BE	11		
N000606	XYZ COMPANY: PRIMARY TRAIT: SECOND RATER ID	BE	11	BE	11		
N000607	XYZ COMPANY: PRIMARY TRAIT: RESOL. RATER ID	BE	11	BE	11		
N000702	SWIMMING POOL: PRIMARY TRAIT SCORE (RATER 1)	BF	6	BF	6	BF	6
N000703	SWIMMING POOL: PRIMARY TRAIT SCORE (RATER 2)	BF	6	BF	6	BF	6
N000704	SWIMMING POOL: PRIMARY TRAIT SCORE	BF	6	BF	6	BF	6
N000705	SWIMMING POOL: PRIMARY TRAIT: FIRST RATER ID	BF	6	BF	6	BF	6
N000706	SWIMMING POOL: PRIMARY TRAIT: SECOND RATER ID	BF	6	BF	6	BF	6
N000707	SWIMMING POOL: PRIMARY TRAIT: RESOL. RATER ID	BF	6	BF	6	BF	6
N000802	PET: PRIMARY TRAIT SCORE (RATER 1)	BF	7	BF	7		
N000803	PET: PRIMARY TRAIT SCORE (RATER 2)	BF	7	BF	7		
N000804	PET: PRIMARY TRAIT SCORE	BF	7	BF	7		
N000805	PET: PRIMARY TRAIT: FIRST RATER ID	BF	7	BF	7		
N000806	PET: PRIMARY TRAIT: SECOND RATER ID	BF	7	BF	7		
N000807	PET: PRIMARY TRAIT: RESOL. RATER ID	BF	7	BF	7		
N000902	RADIO STATION: PRIMARY TRAIT SCORE (RATER 1)	BG	7	BG	7		
N000903	RADIO STATION: PRIMARY TRAIT SCORE (RATER 2)	BG	7	BG	7		
N000904	RADIO STATION: PRIMARY TRAIT SCORE	BG	7	BG	7		
N000905	RADIO STATION: PRIMARY TRAIT: FIRST RATER ID	BG	7	BG	7		
N000906	RADIO STATION: PRIMARY TRAIT: SECOND RATER ID	BG	7	BG	7		
N000907	RADIO STATION: PRIMARY TRAIT: RESOL. RATER ID	BG	7	BG	7		
N001002	APPLEBY HOUSE: PRIMARY TRAIT SCORE (RATER 1)	BG	8	BG	8	BG	8
N001003	APPLEBY HOUSE: PRIMARY TRAIT SCORE (RATER 2)	BG	8	BG	8	BG	8
N001004	APPLEBY HOUSE: PRIMARY TRAIT SCORE	BG	8	BG	8	BG	8
N001005	APPLEBY HOUSE: PRIMARY TRAIT: FIRST RATER ID	BG	8	BG	8	BG	8
N001006	APPLEBY HOUSE: PRIMARY TRAIT: SECOND RATER ID	BG	8	BG	8	BG	8

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N001007	APPLEBY HOUSE: PRIMARY TRAIT: RESOL. RATER ID	BG	8	BG	8	BG	8
N001101	PICTURE:CEREAL WITH TOY INSIDE IS PAX	BH	5	BH	6		
		P3	7				
N001201	LONG DIST:RATE ON CALL-LOWER EVENING RATE			BH	7	P3	26
				P3	26		
N001202	LONG DIST:PERSON CALLS DIFF-OPR ASSISTED			BH	8	P3	27
				P3	27		
N001301	KOLA COUPON:GOOD FOR ANY SIZE CARTON			BH	9	BH	10
N001302	KOLA COUPON:USE ON NOV. 10, 1970			BH	10	BH	11
N001303	KOLA COUPON:PAYMENT IS 12 CENTS			BH	11	BH	12
N001401	VERSE:DECK OF CARDS DESCRIBED IN POEM			BH	12	BH	13
				P3	21	P3	21
N001501	NUTS: DEVIL PUT PEARL IN WALNUT	BH	10	BH	13	BH	14
		P3	1				
N001502	NUTS: FARM WIFE WAS CLEVER AND PRACTICAL	BH	11	BH	14	BH	15
		P3	2				
N001503	NUTS: WANTED TRICK SOMEONE INTO CRACKING WALNUTS	BH	12	BH	15	BH	16
		P3	3				
N001504	NUTS: PLAN WRONG-WOMAN WAS TOO CLEVER FOR HIM	BH	13	BH	16	BH	17
		P3	4				
N001505	NUTS: IS THIS A GOOD STORY?	BH	14	BH	17	BH	18
		P3	5				
N001507	NUTS: PRIMARY TRAIT SCORE (RATER 1)	BH	15	BH	18	BH	19
		P3	6				
N001508	NUTS: PRIMARY TRAIT SCORE (RATER 2)	BH	15	BH	18	BH	19
		P3	6				
N001509	NUTS: PRIMARY TRAIT SCORE	BH	15	BH	18	BH	19
		P3	6				
N001510	NUTS: SECONDARY TRAIT: CONTENT	BH	15	BH	18	BH	19
		P3	6				
N001511	NUTS: SECONDARY TRAIT: FORM	BH	15	BH	18	BH	19
		P3	6				
N001512	NUTS: SECONDARY TRAIT: SUBJ. REACTION	BH	15	BH	18	BH	19
		P3	6				
N001513	NUTS: PRIMARY TRAIT: FIRST RATER ID	BH	15	BH	18	BH	19
		P3	6				
N001514	NUTS: PRIMARY TRAIT: SECOND RATER ID	BH	15	BH	18	BH	19
		P3	6				
N001515	NUTS: PRIMARY TRAIT: RESOL. RATER ID	BH	15	BH	18	BH	19
		P3	6				
N001601	1ST AM:BITTER WINTER-EXTREMELY COLD	BJ	12	BJ	11	P3	8
		P3	8	P3	8		
N001602	1ST AM:ICE AGE PEOPLE DEPENDED ON ANIMALS TO LIVE	BJ	13	BJ	12	P3	9
		P3	9	P3	9		
N001603	1ST AM:NO LAND BRIDGE NOW-COVERED WITH WATER	BJ	14	BJ	13	P3	10
		P3	10	P3	10		

FIELD	SHORT LABEL	AGE 9 BLOCK	ITEM	AGE 13 BLOCK	ITEM	AGE 17 BLOCK	ITEM
N001604	1ST AM:MAIN PURPOSE-EXPLN ICE AGE SETTLERS-N. AM.	BJ	15	BJ	14	P3	11
		P3	11	P3	11		
N001605	1ST AM:HOW INTERESTING WAS THIS ARTICLE	BJ	16	BJ	15	P3	12
		P3	12	P3	12		
N001606	1ST AM:HOW HARD WAS THIS ARTICLE TO READ	BJ	17	BJ	16	P3	13
		P3	13	P3	13		
N001701	BOOK CLUB:SHIPPING COSTS HIGHER IN CANADA			BJ	17	BJ	12
				P2	3	P2	3
N001702	BOOK CLUB:SEND NO MONEY TILL BILLED			BJ	18	BJ	13
				P2	4	P2	4
N001703	BOOK CLUB:BUY 6 MORE			BJ	19	BJ	14
				P2	5	P2	5
N001801	FLY:WANT OF THOUGHT-LACK OF THINKING	BJ	19	BJ	20	P4	20
		P4	14	P4	20		
N001802	FLY:FACING PROBLEMS SIMILAR TO HIS OWN	BJ	20	BJ	21	P4	21
		P4	15	P4	21		
N001901	CHARLEY1: MANS FEARS			BJ	22	BJ	15
N001904	CHARLEY1: PRIMARY TRAIT SCORE (RATER 1)			BJ	24	BJ	17
N001905	CHARLEY1: PRIMARY TRAIT SCORE (RATER 2)			BJ	24	BJ	17
N001906	CHARLEY1: PRIMARY TRAIT SCORE			BJ	24	BJ	17
N001907	CHARLEY1: SECONDARY TRAIT: CONTENT			BJ	24	BJ	17
N001908	CHARLEY1: SECONDARY TRAIT: FORM			BJ	24	BJ	17
N001909	CHARLEY1: SECONDARY TRAIT: SUBJ. REACTION			BJ	24	BJ	17
N001910	CHARLEY1: SECONDARY TRAIT: PIECES OF EVIDENCE			BJ	24	BJ	17
N001911	CHARLEY1: PRIMARY TRAIT: FIRST RATER ID			BJ	24	BJ	17
N001912	CHARLEY1: PRIMARY TRAIT: SECOND RATER ID			BJ	24	BJ	17
N001913	CHARLEY1: PRIMARY TRAIT: RESOL. RATER ID			BJ	24	BJ	17
N002001	WISH COULD FLY:GOSSAMER CONDOR 1ST MUSCLE-POWERED	BK	9	BK	9	BK	9
		P2	10	P2	11	P2	11
N002002	WISH COULD FLY:BIKE RACER, BRYAN ALLEN FLEW CONDOR	BK	10	BK	10	BK	10
		P2	11	P2	12	P2	12
N002003	WISH COULD FLY:MACCREADY PLANE DIFF-SIMPLR/LIGHTR	BK	11	BK	11	BK	11
		P2	12	P2	13	P2	13
N002101	VIRUSES:DIFFICULT TO STUDY	BK	18	BK	12	BK	12
		P4	5	P4	5	P4	5
N002102	VIRUSES:CLOTHE IDEA-GIVE PROOF TO SUPPORT	BK	19	BK	13	BK	13
		P4	6	P4	6	P4	6
N002201	PHONE BILL:FEB 14 CALL FROM ATHENS, GA			BK	14	BK	14
				P2	14	P2	14
N002202	PHONE BILL:FEB 14 CALL TO ST PAUL, MN			BK	15	BK	15
				P2	15	P2	15
N002203	PHONE BILL:FEB 14 CALL COST $.75			BK	16	BK	16
				P2	16	P2	16
N002302	THE DOOR: PRIMARY TRAIT SCORE (RATER 1)			BK	17	BK	17

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N002303	THE DOOR: PRIMARY TRAIT SCORE (RATER 2)			BK	17	BK	17
N002304	THE DOOR: PRIMARY TRAIT SCORE			BK	17	BK	17
N002305	THE DOOR: OTHER TRAIT SCORE 1 EGOCENTRIC			BK	17	BK	17
N002306	THE DOOR: OTHER TRAIT SCORE 2 PERSONAL-ANALYTIC			BK	17	BK	17
N002307	THE DOOR: OTHER TRAIT SCORE 3 EMOTIONAL			BK	17	BK	17
N002308	THE DOOR: OTHER TRAIT SCORE 4 SYNOPSIS			BK	17	BK	17
N002309	THE DOOR: OTHER TRAIT SCORE 5 INFERENCING			BK	17	BK	17
N002310	THE DOOR: OTHER TRAIT SCORE 6 GENERALIZATION			BK	17	BK	17
N002311	THE DOOR: OTHER TRAIT SCORE 7 ANALYSIS			BK	17	BK	17
N002312	THE DOOR: OTHER TRAIT SCORE 8 OTHER WORKS			BK	17	BK	17
N002313	THE DOOR: OTHER TRAIT SCORE 9 EVALUATION			BK	17	BK	17
N002314	THE DOOR: PRIMARY TRAIT: FIRST RATER ID			BK	17	BK	17
N002315	THE DOOR: PRIMARY TRAIT: SECOND RATER ID			BK	17	BK	17
N002316	THE DOOR: PRIMARY TRAIT: RESOL. RATER ID			BK	17	BK	17
N002401	MOSQUITO:SIZE MOSQUITOES EXAGGERATED	BL P2	22 7	BL	22		
N002501	MARY:WILL GET MONEY FROM NEITHER	P2	13	BL P2	23 17	BL P2	27 17
N002701	ATMOSPHERE:4 WORDS CUE-FIRST,NEXT,ABOVE,FINALLY			BL	24	BL	28
N002702	ATMOSPHERE:SCIENTISTS KNOW MOST ABOUT TROPOSPHERE	BL	20			BL	29
N002801	BETHUNE: ROOSEVELT HONOR HER BY MAKING HER DIRECTO	BL	24	BL	25	BL	30
N002802	BETHUNE: START HER SCHOOL TO EDUCATE BLACK CHILDRN	BL	25	BL	26	BL	31
N002804	BETHUNE: PRIMARY TRAIT SCORE (RATER 1)	BL	26	BL	27	BL	32
N002805	BETHUNE: PRIMARY TRAIT SCORE (RATER 2)	BL	26	BL	27	BL	32
N002806	BETHUNE: PRIMARY TRAIT SCORE	BL	26	BL	27	BL	32
N002807	BETHUNE: PRIMARY TRAIT: FIRST RATER ID	BL	26	BL	27	BL	32
N002808	BETHUNE: PRIMARY TRAIT: SECOND RATER ID	BL	26	BL	27	BL	32
N002809	BETHUNE: PRIMARY TRAIT: RESOL. RATER ID	BL	26	BL	27	BL	32
N002901	SOCCER:DID YOU LIKE READING THIS ARTICLE			BM	5	BM	5
N002902	SOCCER:MOST POPULAR BECAUSE PLAYED BY MILLIONS			BM	6	BM	6
N002903	SOCCER:KING ED WANTED TO OUTLAW-PRACTICE ARCHERY			BM	7	BM	7
N002904	SOCCER:CALLED FOREIGN-IMMIGRANTS PLAYED IT MOST			BM	8	BM	8
N002905	SOCCER:INTRO TO ENGLISH BY ROMANS			BM	9	BM	9
N002906	SOCCER:PELE MASTER-FOOLED OPPONENTS BY FAKE MOVES			BM	10	BM	10
N003001	SUPR COURT:CONSTITUTION DESCRIPTION-BRIEF	BM P3	10 14	BM P3	11 15	BM P3	11 15
N003002	SUPR COURT:DIFFICULT RESPON FOR COURT MEMBERS	BM P3	11 15	BM P3	12 16	BM P3	12 16

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N003003	SUPR COURT:"THEIR" REFERS TO PROVISIONS	BM	12	BM	13	BM	13
		P3	16	P3	17	P3	17
N003101	GOODS: DIFF TO MARKET-ROADS POOR	BM	14	BM	14	BM	14
N003102	GOODS: YANKEE PEDDLER-TODAY SALESPERSON	BM	15	BM	15	BM	15
N003104	GOODS: PRIMARY TRAIT SCORE (RATER 1)	BM	16	BM	16	BM	16
N003105	GOODS: PRIMARY TRAIT SCORE (RATER 2)	BM	16	BM	16	BM	16
N003106	GOODS: PRIMARY TRAIT SCORE	BM	16	BM	16	BM	16
N003107	GOODS: PRIMARY TRAIT: FIRST RATER ID	BM	16	BM	16	BM	16
N003108	GOODS: PRIMARY TRAIT: SECOND RATER ID	BM	16	BM	16	BM	16
N003109	GOODS: PRIMARY TRAIT: RESOL. RATER ID	BM	16	BM	16	BM	16
N003201	SUMMER JOB:SOC SECURITY APPLIC AT BANK OR POST OFC			BN	12	BN	21
				P1	7	P1	7
N003202	SUMMER JOB:BEST TIME TO FIND JOB-BEFORE MID-APRIL			BN	13	BN	22
				P1	8	P1	8
N003203	SUMMER JOB:NEED SS CARD TO GET HIRED			BN	14	BN	23
				P1	9	P1	9
N003204	SUMMER JOB:REFERENCES-PEOPLE WHO KNOW APPLICANT			BN	15	BN	24
				P1	10	P1	10
N003301	BOBBY:SAYS TALL IS SMART			BN	16	BN	25
				P3	19	P3	19
N003401	YOUNG GARDENERS:IN CENTRAL PARK-BEST			BN	17		
N003501	TOASTER:DRAGON/TOASTER QUALITIES COMPARED			BN	18	BN	27
				P2	10	P2	10
N003601	MAGIC TRICK:FIRST TIE BLACK THREAD			BN	19	BN	28
				P1	13	P1	13
N003602	MAGIC TRICK:DIMLY LIT RM, SAY PRODUCE FROM AIR			BN	20	BN	29
				P1	14	P1	14
N003701	WEB LIFE: THREAD BREAKS-FALLS APART	BN	23	BN	21	BN	30
N003702	WEB LIFE: MAIN IDEA-PLNTS&ANMS NEED EACH OTHER	BN	24	BN	22	BN	31
N003704	WEB LIFE: PRIMARY TRAIT SCORE (RATER 1)	BN	25	BN	23	BN	32
N003705	WEB LIFE: PRIMARY TRAIT SCORE (RATER 2)	BN	25	BN	23	BN	32
N003706	WEB LIFE: PRIMARY TRAIT SCORE	BN	25	BN	23	BN	32
N003707	WEB LIFE: PRIMARY TRAIT: FIRST RATER ID	BN	25	BN	23	BN	32
N003708	WEB LIFE: PRIMARY TRAIT: SECOND RATER ID	BN	25	BN	23	BN	32
N003709	WEB LIFE: PRIMARY TRAIT: RESOL. RATER ID	BN	25	BN	23	BN	32
N003801	SCOTT:BEST TITLE-SCOTT'S PLAN	BO	12	BO	12	BO	12
		P4	2	P4	2	P4	2
N003802	SCOTT:6 WEEKS BETWEEN DEPOTS	BO	13	BO	13	BO	13
		P4	3	P4	3	P4	3
N003803	SCOTT:CACHE-PLACE FOR STORING THINGS	BO	14	BO	14	BO	14
		P4	4	P4	4	P4	4

FIELD	SHORT LABEL	AGE 9 BLOCK	ITEM	AGE 13 BLOCK	ITEM	AGE 17 BLOCK	ITEM
N003901	SELFISH PERSON:DESCRIPTION IN PASSAGE			BO	16	P3	14
				P3	14		
N004001	TRIANGLE:FIGURE DRAWN			BO	15		
N004002	TRIANGLE:NAME FIGURE AS TRIANGLE			BO	15		
N004101	NONSENSE WORD 1:KAG-FIRE	BO	17	BO	17	P4	22
		P4	16	P4	22		
N004201	MEOW-MOW:2 MONTH KITTEN-FEED 3 OR 4 TMS DAILY	BO	18	BO	18	BO	21
		P4	12	P4	18	P4	18
N004202	MEOW-MOW:CAT LEAVES FOOD-LEAVE BOWL FOR HIM	BO	19	BO	19	BO	22
		P4	13	P4	19	P4	19
N004301	JAVELIN:MAIN REASON			BO	20	BO	23
N004303	JAVELIN: PRIMARY TRAIT SCORE (RATER 1)			BO	21	BO	24
N004304	JAVELIN: PRIMARY TRAIT SCORE (RATER 1)			BO	21	BO	24
N004305	JAVELIN: PRIMARY TRAIT SCORE			BO	21	BO	24
N004306	JAVELIN: PRIMARY TRAIT: FIRST RATER ID			BO	21	BO	24
N004307	JAVELIN: PRIMARY TRAIT: SECOND RATER ID			BO	21	BO	24
N004308	JAVELIN: PRIMARY TRAIT: RESOL. RATER ID			BO	21	BO	24
N004401	NAOMI JAMES:HOW LONG ON SAILING TRIP- 272 DAYS	BP	7	BP	7	P4	15
		P4	9	P4	15		
N004402	NAOMI JAMES:IMPORTANCE OF TRIP-BROKE WORLD RECORD	BP	8	BP	8	P4	16
		P4	10	P4	16		
N004403	NAOMI JAMES:WORST PART OF TRIP- BAD STORM	BP	9	BP	9	P4	17
		P4	11	P4	17		
N004501	AREA CODES:INFO NY-1-212-555-1212			BP	10	BP	20
N004502	AREA CODES:SYRACUSE 1-315-255-6011			BP	11	BP	21
N004601	JOBS 1900: MARTHA THINK-JOB TIRESOME			BP	12	BP	22
N004602	JOBS 1900: JOE FOUND HARD-STAYING IN WOODS			BP	13	BP	23
N004603	JOBS 1900: JOB AT HOME-ADDIE			BP	14	BP	24
N004605	JOBS: PRIMARY TRAIT SCORE (RATER 1)			BP	15	BP	25
N004606	JOBS: PRIMARY TRAIT SCORE (RATER 2)			BP	15	BP	25
N004607	JOBS: PRIMARY TRAIT SCORE			BP	15	BP	25
N004608	JOBS: PRIMARY TRAIT: FIRST RATER ID			BP	15	BP	25
N004609	JOBS: PRIMARY TRAIT: SECOND RATER ID			BP	15	BP	25
N004610	JOBS: PRIMARY TRAIT: RESOL. RATER ID			BP	15	BP	25
N004701	CARRIER AD:IF INTEREST & MEET REQRMNTS-CALL CIRC	BQ	10	BQ	7	P1	15
		P1	15	P1	15		
N004702	CARRIER AD:8 YR OLDS TOO YOUNG FOR JOB	BQ	11	BQ	8	P1	16
		P1	16	P1	16		
N004703	CARRIER AD:MUST DELIVER PAPERS BY 7 EACH AM	BQ	12	BQ	9	P1	17
		P1	17	P1	17		

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N004801	SILKY 3:WISHED HE HAD SOME HAIR	BQ	13	BQ	10	P3	20
		P3	19	P3	20		
N004901	COLORADO:GOLD DISCOVERY DOESN'T BELONG	BQ	14	BQ	11	BQ	10
		P3	17	P3	18	P3	18
N005001	ARTS:BEFORE 1940 ARTS WERE ORIENTED TO ELITE			BQ	13	BQ	7
				P2	6	P2	6
N005002	ARTS:PRIVILEGE OF ARISTOCRATIC FEW-GREAT WORKS			BQ	14	BQ	8
				P2	7	P2	7
N005003	ARTS:MASS PROD NO HARM TO GENUINE ART			BQ	15	BQ	9
				P2	8	P2	8
N005101	DRAWING:WINNIE SHORTER THAN PAMELA-BEST STATEMENT	BQ	15	BQ	12	P2	2
		P2	2	P2	2		
N005201	TRAFFIC:APPEAR IN COURT TO PLEAD NOT GUILTY			BQ	16	BQ	11
				P4	23	P4	23
N005202	TRAFFIC:FINE-$3.00			BQ	17	BQ	12
				P4	24	P4	24
N005203	TRAFFIC:PAY FINE BY THURS, JUNE 11			BQ	18	BQ	13
				P4	25	P4	25
N005301	SEALS: GET FOOD ON SHORE-FROM THEIR FAT			BQ	19		
N005302	SEALS: SURPRISE IN MEXICO-THOUGHT SEALS EXTINCT			BQ	20		
N005303	SEALS: MAIN PURPOSE-DESCRIBE SEALS			BQ	21		
N005304	SEALS: COME SHORE YEARLY-BIRTH TO YOUNG			BQ	22		
N005305	SEALS: BLUBBER MEANING-FAT			BQ	23		
N005401	HERO: INTERESTING ARTICLE			BR	5		
N005402	HERO: EASE OF READING ARTICLE			BR	6		
N005403	HERO: MAIN IDEA-SIMON WAS A GREAT HERO			BR	7		
N005404	HERO: FROM WHAT COUNTRY-VENEZUELA			BR	8		
N005405	HERO: TRUE-COLOMBIA ONCE SPANISH			BR	9		
N005406	HERO: MONEY CALLED 'BOLIVARS'			BR	10		
N005407	HERO: GOAL NEVER REACHED-COUNTRIES JOIN TOGETHER			BR	11		
N005501	BUSINESS: INTERESTING			BR	12	BR	12
N005502	BUSINESS: EASE OF READING			BR	13	BR	13
N005503	BUSINESS: MAIN PURPOSE-BUSINESS TERMS MEAN			BR	14	BR	14
N005504	BUSINESS: OWE 50 DOLLARS FOR BIKE-A LIABILITY			BR	15	BR	15
N005505	BUSINESS: EXTRA MONEY IS PROFIT			BR	16	BR	16
N005601	TREES: TRAPS POLLUTANTS-LEAVES			BR	17		
N005602	TREES: CLEANING THE AIR-FILTERING PARTICLES			BR	18		
N005603	TREES: PURPOS GREEN BELT-REDUCE CITY POLLUTION			BR	19		
N005701	GRAPH:MOST POWER 1980,1985,2000-PETROLEUM			BS	19	BS	19
				P3	28	P3	28

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N005702	GRAPH:IN 2000,HYDROPOWER SUPPLY LESS THAN COAL			BS	20	BS	20
				P3	29	P3	29
N005703	GRAPH:IN 2000 NUCLEAR POWER MORE % TOTAL THAN 1971			BS	21	BS	21
				P3	30	P3	30
N005801	ENGLISH DIC:BOOK TELLS WORD MEANINGS-DICTIONARY	BS	19	BS	22	BS	22
		P1	18	P1	34	P1	34
N005901	CARDCAT:CALL NUMBER-WRITE-IN 629.1 OB2			BS	23	BS	23
N005902	CARDCAT:PICTURES INDIC BY "ILLUS"			BS	24	BS	24
N006001	PHONE DIR:STORES SELL MILK LISTED UNDER DAIRIES			BS	25	BS	25
N006002	PHONE DIR:HENDRICKS MINING ON 63RD ST, 443-1502			BS	26	BS	26
N006003	PHONE DIR:STAR TRACKER OPEN TO REPAIR MICROSCOPE			BS	27	BS	27
N006101	WIND SYMBOLS:FOR 35 KNOTS-SYMBOL 3			BS	30	BS	30
				P1	18	P1	18
N006201	INDEX:FIND KING DARIUS INFO ON PG 23			BS	31	BS	31
				P1	29	P1	29
N006202	INDEX:FIND CUNEIFORM PRONUNCIATION			BS	32	BS	32
				P1	30	P1	30
N006203	INDEX:1875 FRENCH CONSTITUTION INFO ON PG 233			BS	33	BS	33
				P1	31	P1	31
N006204	INDEX:ALTERNATE HDG./DUTCH EAST INDIES-INDONESIA			BS	34	BS	34
				P1	32	P1	32
N006205	INDEX:DISARMAMENT IN EASTERN EUROPE INFO ON PG 279			BS	35	BS	35
				P1	33	P1	33
N006301	CLOTHES SIZES:SHOE SIZE 8-40-1			BS	36	BS	36
				P1	11	P1	11
N006302	CLOTHES SIZES:38 SWEATER-44			BS	37	BS	37
				P1	12	P1	12
N006401	TEXTS:BEST PLACE TO LOCATE BULL RUN HSTY-INDEX			BS	28	BS	28
N006402	TEXTS:BEST PLACE FIND DELTA DEFIN./GEOG-GLOSSARY			BS	29	BS	29
N006501	FIND GUIDE:OPTIONAL BETWEEN OPPRESS-ORACLE	BT	26	BT	26	BT	26
		P1	19	P1	19	P1	19
N006601	TABLE CONTENTS:MOST USEFUL IN AMERICAN HIST COURSE			BT	19	BT	19
				P1	20	P1	20
N006602	TABLE CONTENTS:AMERICAN INDEPENDENCE IN UNIT I			BT	20	BT	20
				P1	21	P1	21
N006603	TABLE CONTENTS:RECONSTRUCTION AFT CIVIL WAR-CHAP.6			BT	21	BT	21
				P1	22	P1	22
N006604	TABLE CONTENTS:MAJOR TOPIC CHAP.17-HAPPENINGS WWII			BT	22	BT	22
				P1	23	P1	23
N006605	TABLE CONTENTS:MIDDLE EAST MAP,1958-1970 ON PG.594			BT	23	BT	23
				P1	24	P1	24
N006701	SCIENCE INDEX:WOLVES FIRST IN BOOK			BT	27	BT	27
				P4	26	P4	26
N006801	MAP:SPANISH IN SOUTH			BT	24	BT	24
N006802	MAP:PEOPLE SETTLED IN ALASKA-NOT ENOUGH INFORM			BT	25	BT	25

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N006901	NEWS:TV SCHEDULE-PG 22			BT	36	BT	36
N006902	NEWS:WEATHER FORECAST-PG 12			BT	37	BT	37
N006903	NEWS:STOCK AVERAGES-PGS 29-31			BT	38	BT	38
N007001	CATALOG CD:WHAT INFO GIVES LOCATION-GV 885 C624			BT	28	BT	28
				P1	25	P1	25
N007002	CATALOG CD:PG FOR OTHER BOOKS SAME TOPIC-221			BT	29	BT	29
				P1	26	P1	26
N007003	CATALOG CD:AUTHORS OF BOOK-COOPER & SIEDENTOP			BT	30	BT	30
				P1	27	P1	27
N007004	CATALOG CD:OTHER HEADING TO FIND BOOK-SIEDENTOP			BT	31	BT	31
				P1	28	P1	28
N007101	BUS SCHED:LAST BUS IN EVENING LEAVE CITADEL 6:45PM			BT	32	BT	32
				P3	22	P3	22
N007102	BUS SCHED:2ND SAT AM BUS ARRIVE DOWNTOWN 8:15AM			BT	33	BT	33
				P3	23	P3	23
N007103	BUS SCHED:MISS 2:35PM FROM HANCOCK WAIT TILL 3:35			BT	34	BT	34
				P3	24	P3	24
N007104	BUS SCHED:LV RUSTIC WED 9:42AM ARRV DWNTWN 10:15AM			BT	35	BT	35
				P3	25	P3	25
N007202	HOLE IN THE BOX: PRIMARY TRAIT SCORE (RATER 1)	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007203	HOLE IN THE BOX: PRIMARY TRAIT SCORE (RATER 2)	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007204	HOLE IN THE BOX: PRIMARY TRAIT SCORE	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007205	HOLE IN THE BOX: PRIMARY TRAIT: FIRST RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007206	HOLE IN THE BOX: PRIMARY TRAIT: SECOND RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007207	HOLE IN THE BOX: PRIMARY TRAIT: RESOL. RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007208	HOLE IN THE BOX: HOLISTIC SCORE (RATER 1)	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007209	HOLE IN THE BOX: HOLISTIC SCORE (RATER 2)	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007210	HOLE IN THE BOX: HOLISTIC SCORE	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007211	HOLE IN THE BOX: FIRST HOLISTIC RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007212	HOLE IN THE BOX: SECOND HOLISTIC RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007213	HOLE IN THE BOX: RESOLUTION HOLISTIC RATER ID	BU	18	BU	18	BU	18
		P4	1	P4	1	P4	1
N007301	BRIDGER:KIND OF PEOPLE WERE MTN MEN-FUR TRAPPERS			BU	19	BU	19
				P1	1	P1	1
N007302	BRIDGER:BEST DESCRIBE STORIES-STRETCHED THE TRUTH			BU	20	BU	20
				P1	2	P1	2

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N007303	BRIDGER:SIMILE-PONDS OF MUD BOILING LIKE MUSH			BU	21	BU	21
				P1	3	P1	3
N007304	BRIDGER:WHO DISCOVERED LAND NOW YELLOWSTONE-COLTER			BU	22	BU	22
				P1	4	P1	4
N007305	BRIDGER:SHOT MISSED ELK BECAUSE ELK OUT OF RANGE			BU	23	BU	23
				P1	5	P1	5
N007306	BRIDGER:HYPERBOLE- LAKES THAT HAD NO BOTTOM			BU	24	BU	24
				P1	6	P1	6
N007401	MEMORY: MAIN REASON WRITE-DESCRIBE DETAILS OF SUMM			BU	25	BU	25
N007402	MEMORY: FRONT PORCH IN SUMMER-COMFORTABLE			BU	26	BU	26
N007403	MEMORY: FAMILY LIFE WORD-CLOSE-KNIT			BU	27	BU	27
N007404	MEMORY: SYRUPY MEANING-HUMID			BU	28	BU	28
N007405	MEMORY: SET UP SWING-SHIPS SAIL ON OCEAN			BU	29	BU	29
N007408	MEMORY: PRIMARY TRAIT SCORE (RATER 1)			BU	31	BU	31
N007409	MEMORY: PRIMARY TRAIT SCORE (RATER 2)			BU	31	BU	31
N007410	MEMORY: PRIMARY TRAIT SCORE			BU	31	BU	31
N007411	MEMORY: SECONDARY TRAIT: CONTENT			BU	31	BU	31
N007412	MEMORY: SECONDARY TRAIT: FORM			BU	31	BU	31
N007413	MEMORY: SECONDARY TRAIT: SUBJ. REACTION			BU	31	BU	31
N007414	MEMORY: SECONDARY TRAIT: PIECES OF EVIDENCE			BU	31	BU	31
N007415	MEMORY: PRIMARY TRAIT: FIRST RATER ID			BU	31	BU	31
N007416	MEMORY: PRIMARY TRAIT: SECOND RATER ID			BU	31	BU	31
N007417	MEMORY: PRIMARY TRAIT: RESOL. RATER ID			BU	31	BU	31
N007501	TRAVELS:MAN AFRAID-FEARFUL THOUGHTS,NO DANGER			BV	29	BV	38
N007504	TRAVELS: PRIMARY TRAIT SCORE (RATER 1)			BV	31	BV	40
N007505	TRAVELS: PRIMARY TRAIT SCORE (RATER 2)			BV	31	BV	40
N007506	TRAVELS: PRIMARY TRAIT SCORE			BV	31	BV	40
N007507	TRAVELS: SECONDARY TRAIT: CONTENT			BV	31	BV	40
N007508	TRAVELS: SECONDARY TRAIT: FORM			BV	31	BV	40
N007509	TRAVELS: SECONDARY TRAIT: SUBJ. REACTION			BV	31	BV	40
N007510	TRAVELS: SECONDARY TRAIT: PIECES OF EVIDENCE			BV	31	BV	40
N007511	TRAVELS: PRIMARY TRAIT: FIRST RATER ID			BV	31	BV	40
N007512	TRAVELS: PRIMARY TRAIT: SECOND RATER ID			BV	31	BV	40
N007513	TRAVELS: PRIMARY TRAIT: RESOL. RATER ID			BV	31	BV	40
N007602	FLASHLIGHT: PRIMARY TRAIT SCORE (RATER 1)	BV	36	BV	32	BV	41
N007603	FLASHLIGHT: PRIMARY TRAIT SCORE (RATER 2)	BV	36	BV	32	BV	41
N007604	FLASHLIGHT: PRIMARY TRAIT SCORE	BV	36	BV	32	BV	41
N007605	FLASHLIGHT: PRIMARY TRAIT: FIRST RATER ID	BV	36	BV	32	BV	41

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N007606	FLASHLIGHT: PRIMARY TRAIT: SECOND RATER ID	BV	36	BV	32	BV	41
N007607	FLASHLIGHT: PRIMARY TRAIT: RESOL. RATER ID	BV	36	BV	32	BV	41
N007702	GHOST STORY: PRIMARY TRAIT SCORE (RATER 1)	BW	39	BW	37	BW	39
N007703	GHOST STORY: PRIMARY TRAIT SCORE (RATER 2)	BW	39	BW	37	BW	39
N007704	GHOST STORY: PRIMARY TRAIT SCORE	BW	39	BW	37	BW	39
N007705	GHOST STORY: PRIMARY TRAIT: FIRST RATER ID	BW	39	BW	37	BW	39
N007706	GHOST STORY: PRIMARY TRAIT: SECOND RATER ID	BW	39	BW	37	BW	39
N007707	GHOST STORY: PRIMARY TRAIT: RESOL. RATER ID	BW	39	BW	37	BW	39
N007801	BASKETMAKER:WHY PEOPLE I BECOME SEDENTARY-GREW FD			BW	38	BW	40
N007802	BASKETMAKER:ABLE FIND REMAINS PEOPLE II-DRY CAVES			BW	39	BW	41
N007803	BASKETMAKER:TRUE-PEOPLE III LIVE IN LARGER COMMUN			BW	40	BW	42
N007804	BASKETMAKER:PEOPLE III USED PITHOUSES FOR CEREMONY			BW	41	BW	43
N007902	FAVORITE MUSIC: PRIMARY TRAIT SCORE (RATER 1)	BW	43	BW	42	BW	44
N007903	FAVORITE MUSIC: PRIMARY TRAIT SCORE (RATER 2)	BW	43	BW	42	BW	44
N007904	FAVORITE MUSIC: PRIMARY TRAIT SCORE	BW	43	BW	42	BW	44
N007905	FAVORITE MUSIC: PRIMARY TRAIT: FIRST RATER ID	BW	43	BW	42	BW	44
N007906	FAVORITE MUSIC: PRIMARY TRAIT: SECOND RATER ID	BW	43	BW	42	BW	44
N007907	FAVORITE MUSIC: PRIMARY TRAIT: RESOL. RATER ID	BW	43	BW	42	BW	44
N008002	SPLIT SESSION: PRIMARY TRAIT SCORE (RATER 1)			BX P2	16 9	BX P2	16 9
N008003	SPLIT SESSION: PRIMARY TRAIT SCORE (RATER 2)			BX P2	16 9	BX P2	16 9
N008004	SPLIT SESSION: PRIMARY TRAIT SCORE			BX P2	16 9	BX P2	16 9
N008005	SPLIT SESSION: PRIMARY TRAIT: FIRST RATER ID			BX P2	16 9	BX P2	16 9
N008006	SPLIT SESSION: PRIMARY TRAIT: SECOND RATER ID			BX P2	16 9	BX P2	16 9
N008007	SPLIT SESSION: PRIMARY TRAIT: RESOL. RATER ID			BX P2	16 9	BX P2	16 9
N008008	SPLIT SESSION: HOLISTIC SCORE (RATER 1)			BX P2	16 9	BX P2	16 9
N008009	SPLIT SESSION: HOLISTIC SCORE (RATER 2)			BX P2	16 9	BX P2	16 9
N008010	SPLIT SESSION: HOLISTIC SCORE			BX P2	16 9	BX P2	16 9
N008011	SPLIT SESSION: FIRST HOLISTIC RATER ID			BX P2	16 9	BX P2	16 9
N008012	SPLIT SESSION: SECOND HOLISTIC RATER ID			BX P2	16 9	BX P2	16 9
N008013	SPLIT SESSION: RESOLUTION HOLISTIC RATER ID			BX P2	16 9	BX P2	16 9

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N008101	CLOSING:FUN-DOORMAN AT PLAZA HOTEL? NO			BX	17	BX	17
				P4	7	P4	7
N008102	CLOSING:FUN-FOR MORE THAN 50 YEARS? NO			BX	18	BX	18
				P4	8	P4	8
N008103	CLOSING:FUN-END SWINGING CAREER? YES			BX	19	BX	19
				P4	9	P4	9
N008104	CLOSING:FUN-JOB HAS HELPED HIM? NO			BX	20	BX	20
				P4	10	P4	10
N008105	CLOSING:FUN-UNLOCK SOME SECRETS? YES			BX	21	BX	21
				P4	11	P4	11
N008106	CLOSING:FUN-A LOT HINGES ON KINDNESS? YES			BX	22	BX	22
				P4	12	P4	12
N008107	CLOSING:MAIN PURPOSE-REPT SWEENEY LEAVES JOB			BX	23	BX	23
				P4	13	P4	13
N008108	CLOSING:TONE OF CAPTION IS CLEVER AND WITTY			BX	24	BX	24
				P4	14	P4	14
N008201	COM-TAIL: OGALOUSSA WAS KILLED WHILE HUNTING			BY	4	BY	6
				P3	1	P3	1
N008202	COM-TAIL: THEME-PERSON NOT DEAD TILL FORGOTTEN			BY	5	BY	7
				P3	2	P3	2
N008203	COM-TAIL: OGALOUSSA IS WISE,FAIR FATHER			BY	6	BY	8
				P3	3	P3	3
N008204	COM-TAIL: OGALOUSSA SHAVED HEAD-RETURNED FROM DEAD			BY	7	BY	9
				P3	4	P3	4
N008205	COM-TAIL: PULI GOT SWITCH-ASKED ABT FATHER MISSING			BY	8	BY	10
				P3	5	P3	5
N008206	COM-TAIL: IS THIS A GOOD STORY?			BY	9	BY	11
				P3	6	P3	6
N008208	COM-TAIL: PRIMARY TRAIT SCORE (RATER 1)			BY	10	BY	12
				P3	7	P3	7
N008209	COM-TAIL: PRIMARY TRAIT SCORE (RATER 2)			BY	10	BY	12
				P3	7	P3	7
N008210	COM-TAIL: PRIMARY TRAIT SCORE			BY	10	BY	12
				P3	7	P3	7
N008211	COM-TAIL: SECONDARY TRAIT: CONTENT			BY	10	BY	12
				P3	7	P3	7
N008212	COM-TAIL: SECONDARY TRAIT: FORM			BY	10	BY	12
				P3	7	P3	7
N008213	COM-TAIL: SECONDARY TRAIT: SUBJ. REACTION			BY	10	BY	12
				P3	7	P3	7
N008214	COM-TAIL: PRIMARY TRAIT: FIRST RATER ID			BY	10	BY	12
				P3	7	P3	7
N008215	COM-TAIL: PRIMARY TRAIT: SECOND RATER ID			BY	10	BY	12
				P3	7	P3	7
N008216	COM-TAIL: PRIMARY TRAIT: RESOL. RATER ID			BY	10	BY	12
				P3	7	P3	7
N008601	CRICKETS: MAKE SOUNDS BY RUBBING WINGS	BH	6				
		P2	15				

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N008602	CRICKETS: WHICH MAKE CHIRPING SOUNDS-ONLY MALES	BH	7				
		P2	16				
N008603	CRICKETS: WHERE ARE EARS - IN FRONT LEGS	BH	8				
		P2	17				
N008701	PICTURE:DOG LYING ON TOP DOGHOUSE-BEST DESCRIPTION	BH	9				
N008801	YVONNE'S DOLL:COULDN'T FIND-UNDER PORCH	BJ	18				
N008901	DOG:WHY DOESNT WANT-THINKS DOGS ARE PESTS	BJ	21				
N008902	DOG:CHILD BRINGING HOME SNAKE	BJ	22				
N008903	DOG:IS THIS A GOOD POEM	BJ	23				
N008905	DOG: PRIMARY TRAIT SCORE (RATER 1)	BJ	24				
N008906	DOG: PRIMARY TRAIT SCORE (RATER 2)	BJ	24				
N008907	DOG: PRIMARY TRAIT SCORE	BJ	24				
N008908	DOG: SECONDARY TRAIT: CONTENT	BJ	24				
N008909	DOG: SECONDARY TRAIT: FORM	BJ	24				
N008910	DOG: SECONDARY TRAIT: SUBJ. REACTION	BJ	24				
N008911	DOG: PRIMARY TRAIT: FIRST RATER ID	BJ	24				
N008912	DOG: PRIMARY TRAIT: SECOND RATER ID	BJ	24				
N008913	DOG: PRIMARY TRAIT: RESOL. RATER ID	BJ	24				
N009001	FOLKS:WHO ARE THEY-HUMANS WHO LIVE NEARBY	BK	12				
N009002	FOLKS:GRAY FOX THINK-FOLKS WERE SENSIBLE	BK	13				
N009003	FOLKS: MAN WAS SITTING ON BENCH IN GARDEN	BK	14				
N009004	FOLKS:DO WHEN FOX CAME NEAR-MAN WAS POLITE	BK	15				
N009101	NONSENSE WORD 3:HABBIES-DOGS	BK	16				
		P3	18				
N009201	PUZZLE 1:BIRD DESCRIBED IN PUZZLE	BK	17				
		P3	28				
N009401	DUAL:WORD BAT-2 MEANINGS FOOLED NELL	BL	23				
N009601	TIMOTHY 1:SITTING ON STEPS	BL	21				
		P1	8				
N009701	BOXBALL: MASSACHUSETTS TEACHER INVENTED BASKETBALL	BM	5				
N009702	BOXBALL:PURPOSE OF ARTICLE-HOW BASKETBALL INVENTED	BM	6				
N009703	BOXBALL:TRUE-FOOTBALL INVENTED BEFORE BASKETBALL	BM	7				
N009704	BOXBALL:AT FIRST USED PEACH BASKET FOR GOALS	BM	8				
N009705	BOXBALL:BOTTOMS CUT OUT-TO MAKE IT EASIER	BM	9				
N009801	PUZZLE 3:CHAIR DESCRIBED IN PUZZLE	BM	12				
N009901	DESCRIPTION 3:PERSON HAS SEEN TOY MANY TIMES	BN	13				
N010001	DOG & SHADOW:LIKED READING IT	BN	17				
		P1	5				

FIELD	SHORT LABEL	AGE 9 BLOCK	ITEM	AGE 13 BLOCK	ITEM	AGE 17 BLOCK	ITEM
N010002	DOG & SHADOW: SAW HIMSELF IN THE STREAM	BN	18				
		P1	6				
N010003	DOG & SHADOW: TEACHES LESSON-GREED DOESN'T PAY	BN	19				
		P1	7				
N010101	SANDWICH:LIKED READING IT	BN	20				
		P1	9				
N010102	SANDWICH:NAMED AFTER PERSON WHO INVENTED IT	BN	21				
		P1	10				
N010103	SANDWICH:WANTED MEAT IN BREAD TO EAT AND GAMBLE	BN	22				
		P1	11				
N010201	DESCRIPTION 1:CLOWN DESCRIBED IN PASSAGE	BO	16				
		P3	20				
N010301	SNOWMAN:BEST DESCRIPTION-SOMEONE MADE SNOWMAN	BO	15				
		P2	9				
N010401	TOOTH TROUBLE: SPEAKER-CHILD	BO	20				
N010402	TOOTH TROUBLE: TRUE-PULLED LOOSE TOOTH	BO	21				
N010403	TOOTH TROUBLE: "NOT ME, WONT PRDCE IT" SAME-NO GRO	BO	22				
N010501	QUICKSAND:HOW TEST FOR IT-POKE WITH A STICK	BP	10				
		P2	3				
N010502	QUICKSAND:MAIN PURPOSE-TO TELL WAYS AVOID DANGER	BP	11				
		P2	4				
N010503	QUICKSAND:IT IS SOUPY SAND YOU CAN'T STAND ON	BP	12				
		P2	5				
N010504	QUICKSAND:IF STEP IN,LIE ON BACK & STRETCH OUT ARM	BP	13				
		P2	6				
N010601	THAD:CANDIDATES FOR PRES NOT ALLOWED GIVE GIFTS	BP	14				
N010602	THAD:MAGGIE THOUGHT THAD GOOD BUT NEED HER HELP	BP	15				
N010603	THAD:MASSIVE STAMPEDE-LOT OF PEOPLE RUSHING	BP	16				
N010604	THAD:EXAGGERATED-CAN DO EVERYTHING IN YELLOW PAGES	BP	17				
N010605	THAD:MAGGIE FIRST HELPED THAD WITH SPEECH	BP	18				
N010701	SENTENCE 3:MOST SENSE-BALL ROLLED DOWN THE STREET	BP	19				
N010801	ANGRY: CHILD COMES OUT WHEN FEELS BETTER	BQ	16				
		P3	29				
N010901	STARS UNSEEN: LIKED READING IT	BQ	17				
N010902	STARS UNSEEN:STAR BECOMES DEAD BY USING UP FUEL	BQ	18				
N010903	STARS UNSEEN:MAIN IDEA-STARS EXIST-WE CAN'T SEE	BQ	19				
N010904	STARS UNSEEN:GRAVITY OF DEAD STARS-PUSH & PULL	BQ	20				
N011001	REPORTER: WHO WAS ERNIE PYLE-NEWSPAPER REPORTER	BR	5				
N011002	REPORTER:HOW PYLES WRITING CHANGE-TROOP MVMNT&GNRL	BR	6				
N011003	REPORTER:HAPPENED TO PYLE-FAMOUS REPORTER	BR	7				
N011004	REPORTER:WHY PYLE CHANGE NEWS-REMEMBED DEATH SOLDI	BR	8				

FIELD	SHORT LABEL	AGE 9 BLOCK	ITEM	AGE 13 BLOCK	ITEM	AGE 17 BLOCK	ITEM
N011101	KIND OF BK:ATMOSPHERE FROM SCIENCE BOOK	BR	9				
		P1	36				
N011201	DOGS'QUAL:BITTEN BY DOG, DISAGREE	BR	10				
		P2	18				
N011301	SKUNK CABBAGE:NAME-SMELLS LIKE SKUNK,LOOKS CABBAGE	BR	11				
		P3	21				
N011302	SKUNK CABBAGE:HARD TO SEE-HIDDEN UNDER HOOD	BR	12				
		P3	22				
N011401	BREATHING:TRUE-BLOOD MOVES OXYGEN	BR	13				
N011402	BREATHING: HOW AIR MOVES TO LUNGS-THROUGH WINDPIPE	BR	14				
N011403	BREATHING:FUNCTION OF AIR SACS IN LUNGS-O2 FROM LU	BR	15				
N011404	BREATHING:CO2 FORM IN BODY-CELLS FORM CO2 WASTE	BR	16				
N011501	DICTIONARY:TO FIND WORD MEANING-DICTIONARY BEST	BT	27				
N011601	DICTIONARY:DEFINITION TOME-A LARGE BOOK	BS	21				
		P3	23				
N011602	DICTIONARY:TOMORROW SYLLABICATED-TO MOR ROW	BS	22				
		P3	24				
N011603	DICTIONARY:PLURAL IS TONSILLECTOMIES	BS	23				
		P3	25				
N011604	DICTIONARY:TOLERANCE IS A NOUN	BS	24				
		P3	26				
N011605	DICTIONARY:TONIC-MAKES YOU FEEL BETTER	BS	25				
		P3	27				
N011701	WHICH WORD COMES FIRST IN DICTIONARY- FLEA	BS	30				
		P4	18				
N011801	ENCYCLOPEDIAS 2:WASHINGTON IN VOL 11	BS	31				
N011901	INDEX:FIND OUT ABOUT SALMON-PGS 84 &85	BS	26				
		P1	24				
N011902	INDEX:ALTERNATE INFO;RAILRDS-TRAVEL & TRANSPORT	BS	27				
		P1	25				
N011903	INDEX:FIND MAP OF SNAKE RIVER-PG 84	BS	28				
		P1	26				
N011904	INDEX:FIND MAP S. AMERICAN RAIN FORESTS-PG. 119	BS	29				
		P1	27				
N012001	DECLARATION OF INDEPENDENCE: BEST INFO ENCYCLOPEDI	BS	32				
N012101	CODE:WHAT DOES HPPE ACTUALLY SPELL-GOOD	BS	33				
N012201	DICTIONARY:PLUME IS FEATHER	BT	19				
		P1	28				
N012202	DICTIONARY:MORE THAN 1 PLOWMAN IS PLOWMEN	BT	20				
		P1	29				
N012203	DICTIONARY:PLUNDER-ROB	BT	21				
		P1	30				
N012204	DICTIONARY:PLUM-IMPORTANT WORK	BT	22				
		P1	31				

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N012301	MUSHROOM: 3 PARTS-CAP, STEM, GILLS	BS	20				
		P1	12				
N012401	INDEX:ALPHA LIST OF TOPICS AND PAGE NUMBERS	BT	24				
N012501	WHALE FOOD: INFO FOUND IN ENCYCLOPEDIA	BT	25				
N012601	ROTOR:BEST PLACE FIND INFO-DICTIONARY ROTOR	BT	23				
		P1	13				
N012701	ENCYCLOPEDIA:INFO ON MEXICO IN VOLUME 6	BT	28				
		P1	32				
N012702	ENCYLOPEDIA:INFO ON INVENTIONS OF EDISON IN VOL.3	BT	29				
		P1	33				
N012703	ENCYLOPEDIA:INFO ON IOWA FARM PRODUCTS IN VOL. 5	BT	30				
		P1	34				
N012704	ENCYCLOPEDIA:INFO ON N.Y.RIVERS & LAKES IN VOL. 7	BT	31				
		P1	35				
N012801	GRAPH:SPENT MOST ON A BOOK	BT	32				
		P1	20				
N012802	GRAPH:RECORD COST $2.50	BT	33				
		P1	21				
N012803	GRAPH: 5 ITEMS COST MORE THAN PAINTBRUSH	BT	34				
		P1	22				
N012804	GRAPH:SPENT SAME AMOUNT ON PAINTS,BIKE PARTS	BT	35				
		P1	23				
N012901	TIMOTHY:3 TEENAGERS TALKING ABOUT HEAT	BU	19				
N013001	OIL SPILL: WHAT IS THE GEORGIA-A SHIP	BU	20				
N013002	OIL SPILL: WHERE WAS SPILL-5 MILES FROM BEACH	BU	21				
N013003	OIL SPILL:WHY LOGS NO STOP OIL-HIGH WAVES	BU	22				
N013004	OIL SPILL: WHAT ARE PEOPLE ASKED TO DO-CLEAN BEACH	BU	23				
N013101	THE COLD:BOY LEFT SHADOW-FROZE TO SIDE OF HOUSE	BU	24				
		P1	1				
N013102	THE COLD:GIRLS FIGHT WITH MELTED WORDS	BU	25				
		P1	2				
N013103	THE COLD:DUCKS FLY AWAY WITH POND	BU	26				
		P1	3				
N013104	THE COLD:WRITER MAKES STORY SOUND PLAYFUL & FUNNY	BU	27				
		P1	4				
N013201	BULLFIGHT:BULL CHARGES CAPE MOTION	BV	29				
		P4	17				
N013301	DESCRIPTION 2:UNHAPPY PERSON DESCRIBED IN PASSAGE	BV	30				
		P1	14				
N013401	FROM THE PLANET:BOTCHIK FELT ANNOYED AND UPSET	BV	31				
N013402	FROM THE PLANET:THOUGHT NO LIFE-THICK CLOUD COVER	BV	32				
N013403	FROM THE PLANET:IN GLASS CAGE WAS A HUMAN BEING	BV	33				
N013501	CRIME:HARD TO PROVE OWN BIKE IF REPAINTED & # GONE	BW	37				
		P4	7				

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N013502	CRIME:MAIN PURPOSE-TO GIVE SECRET WAY TO MARK BIKE	BW	38				
		P4	8				
N013601	SWINGING/STAR:PEOPLE LIKE PIG IF LAZY AND RUDE	BW	40				
N013602	SWINGING/STAR:PEOPLE SHOULD DIFFER-TRY BE BETTER	BW	41				
N013603	SWINGING/STAR: LINE 4 DOESN'T RHYME WITH OTHERS	BW	42				
N013701	OLD MAN:STORY TELLS HOW MAN LOOKS	BX	17				
N013901	SAVING ENERGY: MAIN IDEA-CONSERVE OIL & NAT GAS	BX	18				
N013902	SAVING ENERGY: SOURCE MOST ENERGY-OIL & NAT GAS	BX	19				
N013903	SAVING ENERGY: WHAT CAN SOLAR ENERGY PROVIDE-HEAT	BX	20				
N014001	NONSENSE WORD 3:TUP-PAPER	BM	13				
		P2	14				
N014101	SENTENCE 1:MOST SENSE-BLEW HOUSE DOWN	BQ	21				
N014201	TIMOTHY 2:TEENAGERS STANDING IN CIRCLES	BV	34				
N014301	FRONTIER WOMEN: BEST DESCRIBES WOMEN-WORKED HARD	BN	14				
N014302	FRONTIER WOMEN: ACTIVITIES PERFORMED-MAKE TOOLS&PL	BN	15				
N014303	FRONTIER WOMEN: MADE FROM ANML HORNS/BONES-TOOLS	BN	16				
N014501	CONNECT DOTS:ALONG LINE,CONNECT DOTS	BV	35				
N014502	CONNECT DOTS:DRAW LINE TO TOUCH CIRCLES	BV	35				
N014503	CONNECT DOTS:WRITE 3 IN EACH CIRCLE	BV	35				
N014702	PLANTS: PRIMARY TRAIT SCORE (RATER 1)	BC	23				
N014703	PLANTS: PRIMARY TRAIT SCORE (RATER 2)	BC	23				
N014704	PLANTS: PRIMARY TRAIT SCORE	BC	23				
N014705	PLANTS: PRIMARY TRAIT: FIRST RATER ID	BC	23				
N014706	PLANTS: PRIMARY TRAIT: SECOND RATER ID	BC	23				
N014707	PLANTS: PRIMARY TRAIT: RESOL. RATER ID	BC	23				
N014802	SPACESHIP: PRIMARY TRAIT SCORE (RATER 1)	BE	10				
N014803	SPACESHIP: PRIMARY TRAIT SCORE (RATER 2)	BE	10				
N014804	SPACESHIP: PRIMARY TRAIT SCORE	BE	10				
N014805	SPACESHIP: PRIMARY TRAIT: FIRST RATER ID	BE	10				
N014806	SPACESHIP: PRIMARY TRAIT: SECOND RATER ID	BE	10				
N014807	SPACESHIP: PRIMARY TRAIT: RESOL. RATER ID	BE	10				
N014902	AUNT MAY; PRIMARY TRAIT SCORE (RATER 1)	BX	16				
		P2	8				
N014903	AUNT MAY: PRIMARY TRAIT SCORE (RATER 2)	BX	16				
		P2	8				
N014904	AUNT MAY: PRIMARY TRAIT SCORE	BX	16				
		P2	8				
N014905	AUNT MAY: SECONDARY TRAIT: PIECES OF EVIDENCE	BX	16				
		P2	8				

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N014906	AUNT MAY: PRIMARY TRAIT: FIRST RATER ID	BX P2	16 8				
N014907	AUNT MAY: PRIMARY TRAIT: SECOND RATER ID	BX P2	16 8				
N014908	AUNT MAY: PRIMARY TRAIT: RESOL. RATER ID	BX P2	16 8				
N014909	AUNT MAY: HOLISTIC SCORE (RATER 1)	BX P2	16 8				
N014910	AUNT MAY: HOLISTIC SCORE (RATER 2)	BX P2	16 8				
N014911	AUNT MAY: HOLISTIC SCORE	BX P2	16 8				
N014912	AUNT MAY: FIRST HOLISTIC RATER ID	BX P2	16 8				
N014913	AUNT MAY: SECOND HOLISTIC RATER ID	BX P2	16 8				
N014914	AUNT MAY: RESOLUTION HOLISTIC RATER ID	BX P2	16 8				
N015101	BLACK ELK: THINK WASICHUS WERE GREEDY					BR	17
N015102	BLACK ELK: WHO WERE THE WASICHUS					BR	18
N015103	BLACK ELK:DRINKS WATERS DREAM PREDICT					BR	19
N015104	BLACK ELK: MAIN PURPOSE OF STORY					BR	20
N015201	PEOPLE LEARN TO READ: IN SCHOOL					BN	26
N015501	CHAMONIX: LIKED READING IT					BP	15
N015502	CHAMONIX: WHY SO LONG TO REACH-WINDS TOO STRONG					BP	16
N015503	CHAMONIX: DEVOUASSOU-MAN WHO FOUND CLIMBERS					BP	17
N015504	CHAMONIX: DESMAISON SURVIVE BY MENTAL/PHYS STRNGTH					BP	18
N015505	CHAMONIX: WHY DESMAISON CRY-OVERCOME SUFFERING,JOY					BP	19
N015901	HIGH TECH PIZZA: WHY PIZZA					BQ	14
N015902	HIGH TECH PIZZA: INTERMEDIATE STAGE					BQ	15
N015903	HIGH TECH PIZZA: CORNSTARCH USED					BQ	16
N015905	HIGH TECH PIZZA: PRIMARY TRAIT SCORE (RATER 1)					BQ	17
N015906	HIGH TECH PIZZA: PRIMARY TRAIT SCORE (RATER 2)					BQ	17
N015907	HIGH TECH PIZZA: PRIMARY TRAIT SCORE					BQ	17
N015908	HIGH TECH PIZZA: PRIMARY TRAIT: FIRST RATER ID					BQ	17
N015909	HIGH TECH PIZZA: PRIMARY TRAIT: SECOND RATER ID					BQ	17
N015910	HIGH TECH PIZZA: PRIMARY TRAIT: RESOL. RATER ID					BQ	17
N016001	VOTING: MAIN PURPOSE					BO	15
N016002	VOTING: MEANING OF SUFFRAGE					BO	16
N016003	VOTING: FIRST CONGRESSWOMEN					BO	17

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
N016004	VOTING: DISASTER AT TRIANGLE SHIRTWAIST					BO	18
N016005	VOTING: ROSE SCHNEIDERMAN SAY					BO	19
N016006	VOTING: WW I HELPED SUFFRAGIST CAUSE					BO	20
N017001	THE CHIP: MAIN IDEA					BH	7
N017002	THE CHIP: WIDESPREAD RESULT					BH	8
N017003	THE CHIP: MEANING OF TRIFLING					BH	9
N018002	SPACE PROGRAM: PRIMARY TRAIT SCORE (RATER 1)					BE	10
N018003	SPACE PROGRAM: PRIMARY TRAIT SCORE (RATER 2)					BE	10
N018004	SPACE PROGRAM: PRIMARY TRAIT SCORE					BE	10
N018005	SPACE PROGRAM: PRIMARY TRAIT: FIRST RATER ID					BE	10
N018006	SPACE PROGRAM: PRIMARY TRAIT: SECOND RATER ID					BE	10
N018007	SPACE PROGRAM: PRIMARY TRAIT: RESOL. RATER ID					BE	10
N019002	JOB APPLICATION: PRIMARY TRAIT SCORE (RATER 1)					BE	11
N019003	JOB APPLICATION: PRIMARY TRAIT SCORE (RATER 2)					BE	11
N019004	JOB APPLICATION: PRIMARY TRAIT SCORE					BE	11
N019005	JOB APPLICATION: SECONDARY TRAIT: PERSONAL INFO					BE	11
N019006	JOB APPLICATION: SECONDARY TRAIT: JOB INFO					BE	11
N019007	JOB APPLICATION: PRIMARY TRAIT: FIRST RATER ID					BE	11
N019008	JOB APPLICATION: PRIMARY TRAIT: SECOND RATER ID					BE	11
N019009	JOB APPLICATION: PRIMARY TRAIT: RESOL. RATER ID					BE	11
N020002	LETTER TO UNCLE: PRIMARY TRAIT SCORE (RATER 1)					BF	7
N020003	LETTER TO UNCLE: PRIMARY TRAIT SCORE (RATER 2)					BF	7
N020004	LETTER TO UNCLE: PRIMARY TRAIT SCORE					BF	7
N020005	LETTER TO UNCLE: SECONDARY TRAIT: MADE NOTES					BF	7
N020006	LETTER TO UNCLE: PRIMARY TRAIT: FIRST RATER ID					BF	7
N020007	LETTER TO UNCLE: PRIMARY TRAIT: SECOND RATER ID					BF	7
N020008	LETTER TO UNCLE: PRIMARY TRAIT: RESOL. RATER ID					BF	7
N021002	BIKE LANE: PRIMARY TRAIT SCORE (RATER 1)					BG	7
N021003	BIKE LANE: PRIMARY TRAIT SCORE (RATER 2)					BG	7
N021004	BIKE LANE: PRIMARY TRAIT SCORE					BG	7
N021005	BIKE LANE: PRIMARY TRAIT: FIRST RATER ID					BG	7
N021006	BIKE LANE: PRIMARY TRAIT: SECOND RATER ID					BG	7
N021007	BIKE LANE: PRIMARY TRAIT: RESOL. RATER ID					BG	7

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S000101	TIME SPENT IN ENGLISH CLASS LEARNING TO WRITE	BA	1	BA	1	BA	1
		BU	8	BU	8	BU	8
S000201	REPORTS AND PAPERS WRITTEN FOR SCHOOL LAST 6 WEEKS	BA	2	BA	2	BA	2
		BU	9	BU	9	BU	9
S000301	WRITINGS DONE LAST WEEK FOR SOCIAL STUDIES CLASS	BA	3	BA	3	BA	3
		BU	10	BU	10	BU	10
S000401	WRITINGS DONE LAST WEEK FOR SCIENCE	BA	4	BA	4	BA	4
		BU	11	BU	11	BU	11
S000501	WRITINGS DONE LAST WEEK NON-SCHOOL RELATED	BA	5	BA	5	BA	5
S000601	WHEN WRITING HOW OFTEN TEACHER ASKS TO MAKE NOTES	BA	6	BA	6	BA	6
		BU	1	BU	1	BU	1
S000602	WHEN WRITING HOW OFTEN TEACHER ASKS MAKE OUTLINE	BA	7	BA	7	BA	7
		BU	2	BU	2	BU	2
S000603	WHEN WRITING HOW OFTEN TEACHER ASKS NOTE CHANGES	BA	8	BA	8	BA	8
		BU	3	BU	3	BU	3
S000604	WHEN WRITING HOW OFTEN TEACHER ASKS TALK TEACHER	BA	9	BA	9	BA	9
		BU	4	BU	4	BU	4
S000605	WHEN WRITING HOW OFTEN TEACHER ASKS TALK MATES	BA	10	BA	10	BA	10
		BU	5	BU	5	BU	5
S000606	WHEN WRITING HOW OFTEN TEACHER ASK REDO BEFOR GRD	BA	11	BA	11	BA	11
		BU	6	BU	6	BU	6
S000607	WHEN WRITING HOW OFTEN TEACHER ASK REDO AFTER GRD	BA	12	BA	12	BA	12
		BU	7	BU	7	BU	7
S000701	HOW OFTEN IS TRUE: WRITING IS IMPORTANT	BB	1	BB	1	BB	1
S000702	HOW OFTEN IS TRUE: WRITING HELPS LEARN ABOUT SELF	BB	2	BB	2	BB	2
S000703	HOW OFTEN IS TRUE: WRITING REMINDS ABOUT THINGS	BB	3	BB	3	BB	3
S000704	HOW OFTEN IS TRUE: WRITING HELPS ME STUDY	BB	4	BB	4	BB	4
S000705	HOW OFTEN IS TRUE: WRITING HELPS NEW IDEAS	BB	5	BB	5	BB	5
S000901	WHEN WRITING HOW OFTEN ASK SELF SUBJECT PAPER	BB	6	BB	6	BB	6
		BV	1	BV	1	BV	1
S000902	WHEN WRITING HOW OFTEN LOOK UP FACTS IN BOOKS	BB	7	BB	7	BB	7
		BV	2	BV	2	BV	2
S000903	WHEN WRITING HOW OFTEN THINK BEFORE WRITING	BB	8	BB	8	BB	8
		BV	3	BV	3	BV	3
S000904	WHEN WRITING HOW OFTEN THINK ABOUT ORGANIZATION	BB	9	BB	9	BB	9
		BV	4	BV	4	BV	4
S000905	WHEN WRITING HOW OFTEN USE DIFF STYLES PER PERSON	BB	10	BB	10	BB	10
		BV	5	BV	5	BV	5
S000906	WHEN WRITING HOW OFTEN MAKE CHANGES AS YOU WRITE	BB	11	BB	11	BB	11
		BV	6	BV	6	BV	6
S000907	WHEN WRITING HOW OFTEN MAKE CHANGES AFTER WRITING	BB	12	BB	12	BB	12
		BV	7	BV	7	BV	7
S001001	HOW OFTEN HAVE YOU SHOWN FRIENDS YOUR WRITINGS	BB	13	BB	13	BB	13
		BQ	7	BY	1	BY	1
S001002	HOW OFTEN HAVE PAPERS BEEN PRINTED IN SCHOOL PAPER	BB	14	BB	14	BB	14
		BQ	8	BY	2	BY	2

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S001003	HOW OFTEN DOES YOUR FAMILY READ YOUR PAPERS	BB	15	BB	15	BB	15
		BQ	9	BY	3	BY	3
S001101	HOW OFTEN DOES FAMILY LIST THINGS TO BUY OR DO	BC	1	BC	1	BC	1
S001102	HOW OFTEN DOES FAMILY COPY RECIPES OR DIRECTIONS	BC	2	BC	2	BC	2
S001103	HOW OFTEN DOES FAMILY FILL OUT ORDER BLANKS	BC	3	BC	3	BC	3
S001104	HOW OFTEN DOES FAMILY WRITE CHECKS/KEEP BUDGETS	BC	4	BC	4	BC	4
S001105	HOW OFTEN DOES FAMILY KEEP DIARIES OR JOURNALS	BC	5	BC	5	BC	5
S001106	HOW OFTEN DOES FAMILY WORK CROSSWORD PUZZLE	BC	6	BC	6	BC	6
S001201	HOW OFTEN IS TRUE: I LIKE TO WRITE	BC	7	BC	7	BC	7
S001202	HOW OFTEN IS TRUE: I AM A GOOD WRITER	BC	8	BC	8	BC	8
S001203	HOW OFTEN IS TRUE: THINK WRITING IS WASTE OF TIME	BC	9	BC	9	BC	9
S001204	HOW OFTEN IS TRUE: PEOPLE LIKE WHAT I WRITE	BC	10	BC	10	BC	10
S001205	HOW OFTEN IS TRUE: WRITE ON OWN AWAY FROM SCHOOL	BC	11	BC	11	BC	11
S001206	HOW OFTEN IS TRUE: DISLIKE WRITING TO BE GRADED	BC	12	BC	12	BC	12
S001207	HOW OFTEN IS TRUE: WOULDNT WRITE IF NOT FOR SCHOOL	BC	13	BC	13	BC	13
S001301	HOW OFTEN IS TRUE: MOVE SENTENCES AROUND	BC	14	BC	14	BC	14
		BX	1	BX	1	BX	1
S001302	HOW OFTEN IS TRUE: ADD NEW IDEAS OR INFORMATION	BC	15	BC	15	BC	15
		BX	2	BX	2	BX	2
S001303	HOW OFTEN IS TRUE: TAKE OUT UNDESIRED PARTS	BC	16	BC	16	BC	16
		BX	3	BX	3	BX	3
S001304	HOW OFTEN IS TRUE: CHANGE WORDS	BC	17	BC	17	BC	17
		BX	4	BX	4	BX	4
S001305	HOW OFTEN IS TRUE: CORRECT SPELLING MISTAKES	BC	18	BC	18	BC	18
		BX	5	BX	5	BX	5
S001306	HOW OFTEN IS TRUE: CORRECT GRAMMAR MISTAKES	BC	19	BC	19	BC	19
		BX	6	BX	6	BX	6
S001307	HOW OFTEN IS TRUE: CORRECT PUNCTUATION MISTAKES	BC	20	BC	20	BC	20
		BX	7	BX	7	BX	7
S001308	HOW OFTEN IS TRUE: REWRITE MOST OF PAPER	BC	21	BC	21	BC	21
		BX	8	BX	8	BX	8
S001309	HOW OFTEN IS TRUE: THROW OUT AND START OVER	BC	22	BC	22	BC	22
		BX	9	BX	9	BX	9
S001401	HOW OFTEN IS TRUE: GOOD WRITING GETS A BETTER JOB	BD	1	BD	1	BD	1
S001402	HOW OFTEN IS TRUE: GOOD WRITING MORE INFLUENTIAL	BD	2	BD	2	BD	2
S001501	HOW OFTEN TRUE: WRITING HELPS THINK MORE CLEARLY	BD	3	BD	3	BD	3
S001502	HOW OFTEN TRUE: WRITING HELPS TELL OTHERS THINKING	BD	4	BD	4	BD	4
S001503	HOW OFTEN TRUE: WRITING HELPS TELL OTHERS FEELINGS	BD	5	BD	5	BD	5
S001504	HOW OFTEN TRUE: WRITING HELPS UNDERSTAND MYSELF	BD	6	BD	6	BD	6
S001601	HOW OFTEN DO YOU LIST THINGS TO BUY	BD	7	BD	7	BD	7
S001602	HOW OFTEN DO YOU COPY RECIPES OR DIRECTIONS	BD	8	BD	8	BD	8

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S001603	HOW OFTEN DO YOU FILL OUT ORDER BLANKS	BD	9	BD	9	BD	9
S001604	HOW OFTEN DO YOU KEEP A DIARY OR JOURNAL	BD	10	BD	10	BD	10
S001605	HOW OFTEN DO YOU DO A CROSSWORD PUZZLE	BD	11	BD	11	BD	11
S001606	HOW OFTEN DO YOU HELP OTHER STUDENTS WITH WRITING	BD	12	BD	12	BD	12
S001607	HOW OFTEN DO YOU WRITE ABOUT WHAT YOU HAVE READ	BD	13	BD	13	BD	13
S001608	HOW OFTEN DO YOU WRITE PAPERS TOO PERSONAL TO SHOW	BD	14	BD	14	BD	14
S001609	HOW OFTEN DO YOU WRITE FOR SCHOOL NEWSPAPER	BD	15	BD	15	BD	15
S001701	HOW OFTEN DOES TEACHER TALK RE: FOLLOW DIRECTIONS	BD	16	BD	16	BD	16
		BW	23	BW	23	BW	5
S001702	HOW OFTEN DOES TEACHER TALK RE: WROTE ENOUGH	BD	17	BD	17	BD	17
		BW	24	BW	24	BW	6
S001703	HOW OFTEN DOES TEACHER TALK RE: IDEAS IN PAPER	BD	18	BD	18	BD	18
		BW	25	BW	25	BW	7
S001704	HOW OFTEN DOES TEACHER TALK RE: EXPLAIN IN PAPER	BD	19	BD	19	BD	19
		BW	26	BW	26	BW	8
S001705	HOW OFTEN DOES TEACHER TALK RE: FEELINGS IN PAPER	BD	20	BD	20	BD	20
		BW	27	BW	27	BW	9
S001706	HOW OFTEN DOES TEACHER TALK RE: ORGANIZING PAPER	BD	21	BD	21	BD	21
		BW	28	BW	28	BW	10
S001707	HOW OFTEN DOES TEACHER TALK RE: WORDS IN PAPER	BD	22	BD	22	BD	22
		BW	29	BW	29	BW	11
S001708	HOW OFTEN DOES TEACHER TALK RE: SP, GRAM IN PAPER	BD	23	BD	23	BD	23
		BW	30	BW	30	BW	12
S001709	HOW OFTEN DOES TEACHER TALK RE: NEATNESS IN PAPER	BD	24	BD	24	BD	24
		BW	31	BW	31	BW	13
S001801	HOW OFTEN DOES FAMILY WRITE LETTERS TO RELATIVES	BE	1	BE	1	BE	1
S001802	HOW OFTEN DOES FAMILY WRITE NOTES OR MESSAGES	BE	2	BE	2	BE	2
S001803	HOW OFTEN DOES FAMILY WRITE STORIES OR POEMS	BE	3	BE	3	BE	3
S001804	HOW OFTEN DOES FAMILY WRITE BUSINESS LETTERS	BE	4	BE	4	BE	4
S001901	HOW OFTEN DO YOU WRITE A BOOK REPORT	BE	5	BE	5	BE	5
S001902	HOW OFTEN DO YOU WRITE ABOUT SCIENCE EXPERIMENT	BE	6	BE	6	BE	6
S001903	HOW OFTEN DO YOU WRITE LETTER TO A RELATIVE	BE	7	BE	7	BE	7
S001904	HOW OFTEN DO YOU WRITE NOTES OR MESSAGES	BE	8	BE	8	BE	8
S001905	HOW OFTEN DO YOU WRITE STORIES THAT NOT HOMEWORK	BE	9	BE	9	BE	9
S002001	WHAT WAS THE LAST THING YOU WROTE IN SCHOOL	BF	1	BF	1	BF	1
		BV	14	BV	14	BV	14
		PB	2				
S002002	LAST WRITING IN SCHOOL: COPY OVER BEFORE SUBMITING	BF	2	BF	2	BF	2
		BV	15	BV	15	BV	15
		PB	3				
S002003	LAST WRITING IN SCHOOL: MAKE CHANGES BEFORE SUBMIT	BF	3	BF	3	BF	3
		BV	16	BV	16	BV	16
		PB	4				

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S002004	LAST WRITING IN SCHOOL: MAKE CHANGES AFTER RETURND	BF	4	BF	4	BF	4
		BV	17	BV	17	BV	17
		PB	5				
S002005	LAST WRITING IN SCHOOL: LIKE DOING THE WRITING	BF	5	BF	5	BF	5
		BV	18	BV	18	BV	18
		PB	6				
S002101	REPORTS AND ESSAYS WRITTEN FOR SCHOOL LAST 6 WEEKS	PB	1	PB	1	PB	1
S002201	PART OF CLASS TIME SPENT LEARNING TO WRITE REPORTS			PB	2	PB	2
S002301	HOW OFTEN ENCOURAGED MAKE NOTES ON TOPIC OF PAPER			PB	3	PB	3
S002302	HOW OFTEN ENCOURAGED TO MAKE OUTLINES OF PAPER			PB	4	PB	4
S002303	HOW OFTEN DO YOU WRITE PAPER MORE THAN ONCE			PB	5	PB	5
S002304	HOW OFTEN DOES TEACHER WRITE SUGGESTIONS ON PAPER			PB	6	PB	6
S002305	HOW OFTEN DOES TEACHER DISCUSS FINISHED PAPERS			PB	7	PB	7
S002306	HOW OFTEN DO YOU IMPROVE PAPER AFTER RETURN			PB	8	PB	8
S002307	DO YOU ENJOY WORKING ON WRITING ASSIGNMENTS			PB	9	PB	9
S002501	HOW OFTEN DOES TEACHER MARK ERRORS ON PAPERS	BG	1	BG	1	BG	1
		BV	19	BV	19	BV	19
S002502	HOW OFTEN DOES TEACHER WRITE NOTES ON PAPERS	BG	2	BG	2	BG	2
		BV	20	BV	20	BV	20
S002503	HOW OFTEN DOES TEACHER POINT OUT GOOD THINGS	BG	3	BG	3	BG	3
		BV	21	BV	21	BV	21
S002504	HOW OFTEN DOES TEACHER POINT OUT NOT GOOD THINGS	BG	4	BG	4	BG	4
		BV	22	BV	22	BV	22
S002505	HOW OFTEN DOES TEACHER MAKE SUGGESTIONS FOR NEXT	BG	5	BG	5	BG	5
		BV	23	BV	23	BV	23
S002506	HOW OFTEN DOES TEACHER SHOW INTEREST IN WRITING	BG	6	BG	6	BG	6
		BV	24	BV	24	BV	24
S002701	DID YOU GO TO KINDERGARTEN	BH	1	BH	1	BH	1
		PB	8	PB	11	PB	11
S002702	DID YOU GO TO DAY CARE	BH	2	BH	2	BH	2
		PB	9	PB	12	PB	12
S002703	DID YOU GO TO NURSERY SCHOOL	BH	3	BH	3	BH	3
		PB	10	PB	13	PB	13
S002704	DID YOU GO TO HEADSTART	BH	4	BH	4	BH	4
		PB	11	PB	14	PB	14
S002801	WHERE DID YOU LIVE AT AGE 9			BH	5	BH	5
S002803	WHERE DID YOU LIVE AT AGE 9: COUNTRY			BH	5	BH	5
S002804	RESIDENCE AT AGE 9 VS. CURRENT RESIDENCE			BH	5	BH	5
S002901	DO YOU USE A COMPUTER AT HOME	BJ	1	BJ	1	BJ	1
		PB	14	PB	17	PB	17
S002902	DO YOU USE A COMPUTER AT THE LIBRARY	BJ	2	BJ	2	BJ	2
		PB	15	PB	18	PB	18
S002903	DO YOU USE A COMPUTER AT A FRIENDS HOUSE	BJ	3	BJ	3	BJ	3
		PB	16	PB	19	PB	19

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S002904	HOW OFTEN DO YOU USE A COMPUTER AT SCHOOL	BJ	4	BJ	4	BJ	4
		PB	17	PB	20	PB	20
S003001	DO YOU USE A COMPUTER TO PLAY GAMES	BJ	5	BJ	5	BJ	5
		PB	18	PB	21	PB	21
S003002	DO YOU USE A COMPUTER TO LEARN THINGS	BJ	6	BJ	6	BJ	6
		PB	19	PB	22	PB	22
S003003	DO YOU USE A COMPUTER TO WRITE STORIES OR PAPERS	BJ	7	BJ	7	BJ	7
		PB	20	PB	23	PB	23
S003101	HOW OFTEN DO YOU WRITE COMPUTER PROGRAMS	BJ	8	BJ	8	BJ	8
		PB	21	PB	24	PB	24
S003201	WHAT DO YOU USUALLY DO AFTER SCHOOL	BJ	9	BJ	9	PB	25
		PB	22	PB	25		
S003202	IF YOU GO HOME AFTER SCHOOL, WHO IS USUALLY THERE	BJ	10	BJ	10	PB	26
		PB	23	PB	26		
S003301	WHAT KIND OF READER ARE YOU	BK	1	BK	1	BK	1
		BV	28	BV	28		
S003401	DO YOU EXPECT TO GRADUATE FROM HIGH SCHOOL	BK	2	BK	2	BK	2
		PB	7	PB	10	PB	10
S003501	HOW OFTEN DO YOU READ FOR FUN ON YOUR OWN TIME	BK	3	BK	3	BK	3
		BV	8	BV	8	BV	8
S003502	HOW OFTEN DO YOU TELL A FRIEND ABOUT A GOOD BOOK	BK	4	BK	4	BK	4
		BV	9	BV	9	BV	9
S003503	HOW OFTEN DO YOU TAKE BOOKS OUT OF THE LIBRARY	BK	5	BK	5	BK	5
		BV	10	BV	10	BV	10
S003504	HOW OFTEN DO YOU SPEND YOUR OWN MONEY ON BOOKS	BK	6	BK	6	BK	6
		BV	11	BV	11	BV	11
S003505	HOW OFTEN DO YOU READ BOOK BASED ON MOVIE YOU SAW	BK	7	BK	7	BK	7
		BV	12	BV	12	BV	12
S003506	HOW OFTEN DO YOU READ BOOKS BY AN AUTHOR YOU LIKE	BK	8	BK	8	BK	8
		BV	13	BV	13	BV	13
S003601	HOW OFTEN DO YOU GO TO A MOVIE	BL	1	BL	1	BL	1
S003602	HOW OFTEN DO YOU GO TO A PLAY	BL	2	BL	2	BL	2
S003603	HOW OFTEN DO YOU GO TO A CONCERT	BL	3	BL	3	BL	3
S003604	HOW OFTEN DO YOU GO TO A PARTY	BL	4	BL	4	BL	4
S003605	HOW OFTEN DO YOU GO TO THE PUBLIC LIBRARY	BL	5	BL	5	BL	5
S003606	HOW OFTEN DO YOU TRAVEL TO A PLACE AWAY FROM HOME	BL	6	BL	6	BL	6
S003607	HOW OFTEN DO YOU GO SHOPPING	BL	7	BL	7	BL	7
S003608	HOW OFTEN DO YOU GO TO A SPORTS EVENT	BL	8	BL	8	BL	8
S003609	HOW OFTEN DO YOU PLAY CARD OR TABLE GAMES	BL	9	BL	9	BL	9
S003610	HOW OFTEN DO YOU VISIT RELATIVES	BL	10	BL	10	BL	10
S003611	HOW OFTEN DO YOU GO TO A MUSEUM	BL	11	BL	11	BL	11
S003612	HOW OFTEN DO YOU GO CAMPING	BL	12	BL	12	BL	12
S003613	HOW OFTEN DO YOU STAY HOME ALONE	BL	13	BL	13	BL	13

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S003614	WHAT ACTIVITY DO YOU DO MOST OFTEN	BL	14	BL	14	BL	14
S003701	DO YOU EVER FEEL BORED AT SCHOOL	BL	15	BL	15	BL	15
		PB	25	PB	27	PB	27
S003801	DURING PAST YEAR HOW OFTEN SENT TO PRINCIPALS OFF	BL	16	BL	16	BL	16
		PB	26	PB	28	PB	28
S003802	DURING PAST YEAR HOW OFTEN PLACED ON PROBATION			BL	17	BL	17
				PB	29	PB	29
S003803	DURING PAST YEAR HOW OFTEN GIVEN DETENTION			BL	18	BL	18
				PB	30	PB	30
S003804	DURING PAST YEAR HOW OFTEN WARNED ABOUT ATTENDANCE	BL	17	BL	19	BL	19
		PB	27	PB	31	PB	31
S003805	DURING PAST YEAR HOW OFTEN WARNED ABOUT GRADES	BL	18	BL	20	BL	20
		PB	28	PB	32	PB	32
S003806	DURING PAST YEAR HOW OFTEN WARNED ABOUT BEHAVIOR	BL	19	BL	21	BL	21
		PB	29	PB	33	PB	33
S003901	HOW MANY OLDER BROTHERS AND SISTERS	BM	1	BM	1	BM	1
		PB	12	PB	15	PB	15
S003902	HOW MANY YOUNGER BROTHERS AND SISTERS	BM	2	BM	2	BM	2
		PB	13	PB	16	PB	16
S004001	HOW MANY DAYS OF SCHOOL MISSED LAST MONTH	BM	3	BM	3	BM	3
		PB	30	PB	34	PB	34
S004101	HOW MANY TIMES LATE FOR SCHOOL LAST MONTH	BM	4	BM	4	BM	4
		PB	31	PB	35	PB	35
S004201	HOW OFTEN READING: HELPS ME DECIDE WANT TO BE	BN	1	BN	1	BN	1
S004202	HOW OFTEN READING: HELPS ME LEARN TO FIX THINGS	BN	2	BN	2	BN	2
S004203	HOW OFTEN READING: HELPS UNDERSTAND PEOPLES ACTION	BN	3	BN	3	BN	3
S004204	HOW OFTEN READING: READING IS IMPORTANT	BN	4	BN	4	BN	4
S004205	HOW OFTEN READING: BETTER FEWER HARD WORDS	BN	5	BN	5	BN	5
S004206	HOW OFTEN READING: BETTER FEWER LONG SENTENCES	BN	6	BN	6	BN	6
S004207	HOW OFTEN READING: BETTER IF IT MATTERED TO ME	BN	7	BN	7	BN	7
S004208	HOW OFTEN READING: BETTER IF TEACH GAVE MORE TIME	BN	8	BN	8	BN	8
S004209	HOW OFTEN READING: BETTER IF DIDNT HAVE SO MUCH	BN	9	BN	9	BN	9
S004210	HOW OFTEN READING: BETTER IF WASNT TESTED ON IT	BN	10	BN	10	BN	10
S004211	HOW OFTEN READING: LIKE MORE IF COULD TALK W OTHER	BN	11	BN	11	BN	11
S004301	HOW OFTEN DO YOU READ A STORY OR NOVEL	BO	1	BO	1	BO	1
S004302	HOW OFTEN DO YOU READ A POEM	BO	2	BO	2	BO	2
S004303	HOW OFTEN DO YOU READ A PLAY	BO	3	BO	3	BO	3
S004304	HOW OFTEN DO YOU READ A NEWSPAPER	BO	4	BO	4	BO	4
S004305	HOW OFTEN DO YOU READ A MAGAZINE	BO	5	BO	5	BO	5
S004306	HOW OFTEN DO YOU READ A SCIENCE BOOK	BO	6	BO	6	BO	6
S004307	HOW OFTEN DO YOU READ A BIOGRAPHY	BO	7	BO	7	BO	7

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S004308	HOW OFTEN DO YOU READ A HOW-TO-DO BOOK	BO	8	BO	8	BO	8
S004309	HOW OFTEN DO YOU READ A BOOK ABOUT OTHER TIMES	BO	9	BO	9	BO	9
S004310	HOW OFTEN DO YOU READ A SPORTS BOOK	BO	10	BO	10	BO	10
S004311	HOW OFTEN DO YOU READ WORDS OF A SONG	BO	11	BO	11	BO	11
S004401	HOW OFTEN DOES SOMEONE READ ALOUD TO YOU	BP	1	BP	1	BP	1
S004402	HOW OFTEN DO YOU READ ALOUD TO SOMEONE	BP	2	BP	2	BP	2
S004501	HOW OFTEN DOES FAMILY READ NEWSPAPERS	BP	3	BP	3	BP	3
S004502	HOW OFTEN DOES FAMILY READ MAGAZINES	BP	4	BP	4	BP	4
S004503	HOW OFTEN DOES FAMILY READ BOOKS	BP	5	BP	5	BP	5
S004504	HOW OFTEN DOES FAMILY READ RECIPES	BP	6	BP	6	BP	6
S004601	HOW OFTEN WITH NEW READING TEACHER POINT HARD WORD	BQ	1	BQ	1	BQ	1
		BU	12	BU	12	BU	12
		BV	25	BV	25	BV	25
		BX	10	BX	10	BX	10
S004602	HOW OFTEN WITH NEW READING TEACHER PREVIEW READING	BQ	2	BQ	2	BQ	2
		BU	13	BU	13	BU	13
		BV	26	BV	26	BV	26
		BX	11	BX	11	BX	11
S004603	HOW OFTEN WITH NEW READING TEACHER READ PART ALOUD	BQ	3	BQ	3	BQ	3
		BU	14	BU	14	BU	14
		BV	27	BV	27	BV	27
		BX	12	BX	12	BX	12
S004701	HOW OFTEN DOES TEACHER LIST OF QUESTS AS YOU READ	BQ	4	BQ	4	BQ	4
		BU	15	BU	15	BU	15
		BX	13	BX	13	BX	13
S004702	HOW OFTEN DOES TEACHER TELL HOW TO FIND MAIN IDEA	BQ	5	BQ	5	BQ	5
		BU	16	BU	16	BU	16
		BX	14	BX	14	BX	14
S004703	HOW OFTEN DOES TEACHER TELL HOW TO READ FASTER	BQ	6	BQ	6	BQ	6
		BU	17	BU	17	BU	17
		BX	15	BX	15	BX	15
S004801	HOW OFTEN TRUE: WRITING HELPS ME GET A GOOD JOB	BR	1	BR	1	BR	1
S004802	HOW OFTEN TRUE: WRITING HELPS ME SHARE MY IDEAS	BR	2	BR	2	BR	2
S004803	HOW OFTEN TRUE: WRITING HELPS SHOW I KNOW THINGS	BR	3	BR	3	BR	3
S004804	HOW OFTEN TRUE: WRITING HELPS KEEP IN TOUCH FRIEN	BR	4	BR	4	BR	4
S005001	WHEN FREE TIME, HOW OFTEN WATCH TV	BS	1	BS	1	BS	1
		BW	1	BW	1		
S005002	WHEN FREE TIME, HOW OFTEN READ A BOOK	BS	2	BS	2	BS	2
		BW	2	BW	2		
S005003	WHEN FREE TIME, HOW OFTEN WRITE IN DIARY	BS	3	BS	3	BS	3
		BW	3	BW	3		
S005004	WHEN FREE TIME, HOW OFTEN CALL A FRIEND	BS	4	BS	4	BS	4
		BW	4	BW	4		
S005005	WHEN FREE TIME, HOW OFTEN BE WITH FRIENDS	BS	5	BS	5	BS	5
		BW	5	BW	5		

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S005006	WHEN FREE TIME, HOW OFTEN GO SHOPPING	BS	6	BS	6	BS	6
		BW	6	BW	6		
S005007	WHEN FREE TIME, HOW OFTEN PLAY A SPORT	BS	7	BS	7	BS	7
		BW	7	BW	7		
S005008	WHEN FREE TIME, HOW OFTEN GO HUNTING OR FISHING	BS	8	BS	8	BS	8
		BW	8	BW	8		
S005009	WHEN FREE TIME, HOW OFTEN TAKE A WALK	BS	9	BS	9	BS	9
		BW	9	BW	9		
S005010	WHEN FREE TIME, HOW OFTEN WORK AT A COMPUTER	BS	10	BS	10	BS	10
		BW	10	BW	10		
S005011	WHEN FREE TIME, HOW OFTEN PLAY VIDEO GAMES	BS	11	BS	11	BS	11
		BW	11	BW	11		
S005012	WHEN FREE TIME, HOW OFTEN READ A NEWSPAPER	BS	12	BS	12	BS	12
		BW	12	BW	12		
S005013	WHEN FREE TIME, HOW OFTEN GET A SNACK	BS	13	BS	13	BS	13
		BW	13	BW	13		
S005014	WHEN FREE TIME, HOW OFTEN DO EXTRA HOMEWORK	BS	14	BS	14	BS	14
		BW	14	BW	14		
S005015	WHEN FREE TIME, HOW OFTEN WRITE A LETTER	BS	15	BS	15	BS	15
		BW	15	BW	15		
S005016	WHEN FREE TIME, HOW OFTEN LISTEN TO MUSIC	BS	16	BS	16	BS	16
		BW	16	BW	16		
S005017	WHEN FREE TIME, HOW OFTEN DO SOMETHING ELSE	BS	17	BS	17	BS	17
		BW	17	BW	17		
S005018	WHEN FREE TIME, DO SOMETHING ELSE, WHAT IS IT	BS	17	BS	17	BS	17
		BW	17	BW	17		
S005019	WHEN FREE TIME WHAT ACTIVITY SPEND MOST TIME	BS	18	BS	18	BS	18
		BW	18	BW	18		
S005101	HOW OFTEN WHEN STUDY FOR TEST: READ OVER MATERIAL	BT	1	BT	1	BT	1
S005102	HOW OFTEN WHEN STUDY FOR TEST: TAKE NOTES ON READ	BT	2	BT	2	BT	2
S005103	HOW OFTEN WHEN STUDY FOR TEST: MAKE OUTLINES	BT	3	BT	3	BT	3
S005104	HOW OFTEN WHEN STUDY FOR TEST: QUES IN TEXTBOOK	BT	4	BT	4	BT	4
S005105	HOW OFTEN WHEN STUDY FOR TEST: ANSWER OWN QUESTNS	BT	5	BT	5	BT	5
S005106	HOW OFTEN WHEN STUDY FOR TEST: QUESTION OTHERS	BT	6	BT	6	BT	6
S005201	HOW OFTEN DO YOU READ ALOUD IN SCHOOL	BT	7	BT	7	BT	7
S005202	HOW OFTEN DO YOU READ ON YOUR OWN IN SCHOOL	BT	8	BT	8	BT	8
S005203	HOW OFTEN DO YOU WORK IN A WORKBOOK	BT	9	BT	9	BT	9
S005301	HOW OFTEN GO TO LIBRARY TO READ ON OWN	BT	10	BT	10	BT	10
		BW	32	BW	32	BW	14
S005302	HOW OFTEN GO TO LIBRARY TO LOOK UP FACT FOR SCHOOL	BT	11	BT	11	BT	11
		BW	33	BW	33	BW	15
S005303	HOW OFTEN GO TO LIBRARY TO FIND BOOKS FOR HOBBIES	BT	12	BT	12	BT	12
		BW	34	BW	34	BW	16
S005304	HOW OFTEN GO TO LIBRARY FOR QUIET PLACE TO READ	BT	13	BT	13	BT	13
		BW	35	BW	35	BW	17

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S005305	HOW OFTEN GO TO LIBRARY TO TAKE OUT BOOKS	BT	14	BT	14	BT	14
		BW	36	BW	36	BW	18
S005401	HOW OFTEN DO YOU WATCH NEWS ON TELEVISION	BT	15	BT	15	BT	15
		BW	19	BW	19	BW	1
S005402	HOW OFTEN DO YOU READ A NEWS MAGAZINE	BT	16	BT	16	BT	16
		BW	20	BW	20	BW	2
S005403	HOW OFTEN DO YOU READ NEWSPAPER NOT COMICS OR SPRT	BT	17	BT	17	BT	17
		BW	21	BW	21	BW	3
S005404	HOW OFTEN DO YOU LISTEN TO NEWS ON RADIO	BT	18	BT	18	BT	18
		BW	22	BW	22	BW	4
S005701	HAVE YOU APPLIED FOR ADMISSION TO A COLLEGE OR UNV					BJ	10
S005702	HAVE YOU APPLIED TO A FOUR-YEAR COLLEGE					BJ	10
S005703	HAVE YOU APPLIED TO A TWO-YEAR COLLEGE					BJ	10
S005704	HAVE YOU APPLIED TO OTHER COLLEGE OR UNIVERSITY					BJ	10
S005705	HAVE YOU APPLIED; SPECIFY OTHER COLLEGE OR UNIV					BJ	10
S005801	WHAT ARE YOUR LONG-TERM CAREER GOALS					BJ	11
S005802	LONG-TERM CAREER GOAL CODE					BJ	11
S005803	LONG TERM CAREER GOAL: NON-CODEABLE					BJ	11
S005901	WHERE DID YOU LIVE AT AGE 13					BH	6
S005903	WHERE DID YOU LIVE AT AGE 13: COUNTRY					BH	6
S005904	RESIDENCE AT AGE 13 VS. CURRENT RESIDENCE					BH	6
S006001	WHICH COURSES HAVE YOU TAKEN:GENERAL SCIENCE					BL	22
S006002	WHICH COURSES HAVE YOU TAKEN:BIOLOGY					BL	23
S006003	WHICH COURSES HAVE YOU TAKEN:CHEMISTRY					BL	24
S006004	WHICH COURSES HAVE YOU TAKEN:PHYSICS					BL	25
S006006	WHICH COURSES HAVE YOU TAKEN:SPEC OTH SCIENCE (1)					BL	26
S006008	WHICH COURSES HAVE YOU TAKEN:SPEC OTH SCIENCE (2)					BL	26
S006010	WHICH COURSES HAVE YOU TAKEN:SPEC OTH SCIENCE (3)					BL	26
S006101	WHICH COURSES HAVE YOU TAKEN:GENERAL MATH 1					BN	12
S006102	WHICH COURSES HAVE YOU TAKEN:GENERAL MATH 2					BN	13
S006103	WHICH COURSES HAVE YOU TAKEN:FIRST YEAR ALGEBRA					BN	14
S006104	WHICH COURSES HAVE YOU TAKEN:SECOND YEAR ALGEBRA					BN	15
S006105	WHICH COURSES HAVE YOU TAKEN:GEOMETRY					BN	16
S006106	WHICH COURSES HAVE YOU TAKEN:CALCULUS					BN	17
S006108	WHICH COURSES HAVE YOU TAKEN:SPECIFY OTHER MATH(1)					BN	18
S006110	WHICH COURSES HAVE YOU TAKEN:SPECIFY OTHER MATH(2)					BN	19
S006112	WHICH COURSES HAVE YOU TAKEN:SPECIFY OTHER MATH(3)					BN	20
S006201	RATE YOUR SCHOOL IN:PREPARING STUDENTS FOR COLLEGE					BP	7

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S006202	RATE YOUR SCHOOL IN:PREPARING STUDENTS FOR CAREER					BP	8
S006203	RATE YOUR SCHOOL IN:PREPARING STUDENTS FOR LIFE					BP	9
S006204	RATE YOUR SCHOOL IN:VARIETY OF EXTRACUR ACTIVITIES					BP	10
S006205	RATE YOUR SCHOOL IN:QUALITY OF EXTRACUR ACTIVITES					BP	11
S006206	RATE YOUR SCHOOL IN:FACULTY INTEREST IN STUDENTS					BP	12
S006207	RATE YOUR SCHOOL IN:QUALITY OF FACULTY					BP	13
S006208	RATE YOUR SCHOOL IN:QUALITY OF STUDENT LIFE					BP	14
S006301	SCHOOL EXPERIENCES:I AM SATSFIED WITH MY EDUCATION					BR	5
S006302	SCHOOL EXPERIENCES:NOT LEARNG WHAT I NEED TO KNOW					BR	6
S006303	SCHOOL EXPERIENCES:HAVE HAD DISCIPLNE PRBS THIS YR					BR	7
S006304	SCHOOL EXPERIENCES:I AM INTERESTED IN SCHOOL					BR	8
S006305	SCHOOL EXPERIENCES:ONCE IN A WHILE I CUT CLASS					BR	9
S006306	SCHOOL EXPERIENCES:I DON'T FEEL SAFE AT THIS SCHL					BR	10
S006307	SCHOOL EXPERIENCES:WISH I COULD GO TO DIFF SCHOOL					BR	11
S006401	HAVE YOU EVER BEEN IN PROGRAM:REMEDIAL ENGLISH					BV	28
S006402	HAVE YOU EVER BEEN IN PROGRAM:REMEDIAL MATH					BV	29
S006403	HAVE YOU EVER BEEN IN PROGRAM:HONORS ENGLISH					BV	30
S006404	HAVE YOU EVER BEEN IN PROGRAM:HONORS MATHEMATICS					BV	31
S006405	HAVE YOU EVER BEEN IN PROGRAM:HONORS SCIENCE					BV	32
S006406	HAVE YOU EVER BEEN IN PROGRAM:BILINGUAL PROGRAM					BV	33
S006407	HAVE YOU EVER BEEN IN PROGRAM:FAMILY-LIFE,SEX ED					BV	34
S006408	HAVE YOU EVER BEEN IN PROGRAM:ALCOHL,DRUG-ABUSE ED					BV	35
S006409	HAVE YOU EVER BEEN IN PROGRAM:SPEC PHYSICAL PROGRM					BV	36
S006410	HAVE YOU EVER BEEN IN PROGRAM:SPEC SPEECH PROGRAM					BV	37
S006501	HAVE YOU TAKEN COURSES:AGRICULTURE,INCLD HORTICULT					BW	19
S006502	HAVE YOU TAKEN COURSES:AUTO MECHANICS					BW	20
S006503	HAVE YOU TAKEN COURSES:COMMERCIAL ARTS					BW	21
S006504	HAVE YOU TAKEN COURSES:COMPUTER PROGRAMMING					BW	22
S006505	HAVE YOU TAKEN COURSES:CONSTRUCTION,CARPENTRY TRDS					BW	23
S006506	HAVE YOU TAKEN COURSES:CONSTRUCTION TRADES:ELECTRL					BW	24
S006507	HAVE YOU TAKEN COURSES:CONTRUCTION TRADES:MASONRY					BW	25
S006508	HAVE YOU TAKEN COURSES:CONSTRUCTION TRADES:PLUMBNG					BW	26
S006509	HAVE YOU TAKEN COURSES:COSMETOLOGY,HAIRDRESSING					BW	27
S006510	HAVE YOU TAKEN COURSES:DRAFTING					BW	28
S006511	HAVE YOU TAKEN COURSES:ELECTRONICS					BW	29
S006512	HAVE YOU TAKEN COURSES:HOME EC,DIETETICS,CHILD CAR					BW	30

FIELD	SHORT LABEL	AGE 9 BLOCK	AGE 9 ITEM	AGE 13 BLOCK	AGE 13 ITEM	AGE 17 BLOCK	AGE 17 ITEM
S006513	HAVE YOU TAKEN COURSES:MACHINE SHOP					BW	31
S006514	HAVE YOU TAKEN COURSES:MEDICAL OR DENTAL ASSISTNT					BW	32
S006515	HAVE YOU TAKEN COURSES:PRACTICAL NURSING					BW	33
S006516	HAVE YOU TAKEN COURSES:FOOD SERVICE OCCUPATIONS					BW	34
S006517	HAVE YOU TAKEN COURSES:SALES OR MERCHANDISING					BW	35
S006518	HAVE YOU TAKEN COURSES:SECRETARIAL,OFFICE WORK					BW	36
S006519	HAVE YOU TAKEN COURSES:WELDING					BW	37
S006520	HAVE YOU TAKEN COURSES;OTHER					BW	38
S006601	WHAT TAKE MOST OF YOUR TIME YEAR AFTER HIGH SCHOOL					BY	4
S006602	TAKE MOST OF TIME AFTER HIGH SCHOOL:SPECIFY OTHER					BY	4
S006701	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:WORK					BY	5
S006702	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:APPRENTICE					BY	5
S006703	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:MILITARY					BY	5
S006704	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:HOMEMAKER					BY	5
S006705	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:VOC SCHOOL					BY	5
S006706	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:COMM COLLEG					BY	5
S006707	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:VOC COURSES					BY	5
S006708	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:4-YR COLLEG					BY	5
S006709	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:TRAVEL,NONE					BY	5
S006710	OTHER PLANS FOR YEAR AFTER HIGH SCHOOL:SPEC OTHER					BY	5
S006801	HOW MUCH FREE TIME ON AVERAGE SCHOOL DAY	BJ PB	11 24			BJ	9

X. Glossary

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

GLOSSARY

administration. The conduct of a National Assessment session.

Administration Schedule. A list of the name, age and sex of each student invited to a particular assessment session.

administration time. The total time allowed for an item. (Includes the time allowed for the stimulus and the response.)

administration timetable. Time periods during the school year when the various grade/age groups are assessed. The time periods for the Year 15 assessment were:

Grade 8/Age 13
October 10 to December 16, 1983

Grade 4/Age 9
January 2 to March 9, 1984

Grade 11/Age 17
March 12 to May 11, 1984

administrative units. Geographic areas such as states, counties, school districts, etc.

AERA. American Educational Research Association.

age-eligible. An individual who meets the age definition for one of the National Assessment populations: 9-year-olds, 13-year-olds, 17-year-olds.

aggregate estimate. Estimate for a combination of smaller groups for which estimates have been produced.

allocation. Apportionment of a total sample size to various parts of the population (See *final allocation.*)

almanacs. The sets of tables summarizing NAEP results.

anchoring. The process of characterizing score levels in terms of predicted observable behavior.

ARM. See *Average Response Method.*

assessment. The documentation of the progress in knowledge, skills and attitudes of American youth. Measures are taken at periodic intervals for each learning area, with the goal of determining trends and reporting the findings to the public and to the education community. See also *National Assessment of Educational Progress.*

assessment administrator. Individual employed to administer the assessment in participating schools.

assessment session. The period of time during which a NAEP package is administered to one or more individuals.

Average Response Method. A regress-based technique for predicting for a respondent the conditional distribution of an average score on a set of exercises given responses to at least one of the exercises and other information. Used to produce the NAEP Year 15 Writing Scale.

average sample size. The average sample obtained per sampling unit selected.

background and attitude items. See *non-cognitive assessment.*

bias. In statistics, the difference between the expected value of an estimator and the population parameter being estimated. If the average value of the estimator over all possible samples (the estimator's expected value) equals the parameter being estimated, the estimator is said to be **unbiased**; otherwise, the estimator is **biased**.

BIB (Balanced Incomplete Block) spiralling. A complex variant of multiple matrix sampling, in which a small subset of items is administered to each respondent in such a way that each pair of items is administered to a nationally representative subsample of respondents.

BILOG. A computer program for estimating item parameters by marginal estimation procedures.

block. A group of assessment items created by dividing the item pool for a grade/age into subsets. Used in the implementation of the BIB and UBIB Spiral sample design.

booklet. The assessment instrument created by combining blocks of assessment items.

bridging. An administration of the same set of exercises under two different conditions or to two different populations to allow a statistical link (*"bridge"*) to be established between results under the different circumstances.

calibrate. To estimate the parameters of a set of items from responses of a sample of a set of examinees.

category (scoring). A classification of a response to an open-ended item. See *Scoring Guide.*

category within a variable. A sub-classification within a variable, or subgroup. For example, Male and Female are categories of the subgroup Sex. See *Reporting Subgroups.*

cell. The smallest unit of a table. For example, a two-way table with 5 rows and 7 columns contains 35 cells (5 x 7 = 35).

census tract (CT). Small, relatively permanent areas into which large cities and adjacent areas are divided for the purpose of providing small-area statistics. The average census tract contains approximately 4,000 residents.

clustering. The process of forming groups of sampling units.

codebook. A printout of the raw data files for each student, excluded student, teacher and school in a particular grade/age.

coefficient of variation. The ratio of the standard deviation of an estimate to the value of the estimate.

cognitive assessment. The portion of the Year 15 NAEP which assessed students' abilities in the learning areas of reading and writing.

combined ratio estimator. The ratio estimator resulting from first estimating the numerator and the denominator values and then using the quotient of these as the estimate of the ratio.

common block. A group of background items included in the beginning of every assessment booklet.

complete enumeration survey. Survey in which the entire population is enumerated or surveyed; a census.

conditional probability. Probability of an event, given the occurrence of another event.

conditioning variables. Demographic variables characterizing respondent. Used in construction of plausible values.

controlled selection. A method of probability sampling involving balanced samples on asymmetrical controls. Further controls beyond stratification are used.

CPS. See *Current Population Survey.*

Current Population Survey. A household sample survey conducted monthly by the Bureau of the Census to provide estimates of employment, unemployment, and other characteristics of the general labor force, of the population as a whole, and of various subgroups of the population.

CV. See *coefficient of variation.*

data editing. The process by which assessment responses and other information are verified.

data entry. The process by which assessment responses and other information are transferred from paper to computer.

degrees of freedom. [of a variance estimator]. The number of independent pieces of information used to generate the estimate. For Year 15 NAEP, this is at most 32, the number of PSU pairs.

demographic subgroups. See *reporting subgroups.*

derived variables. Subgroup data that were not obtained directly from assessment responses, but through procedures of interpretation, classification or calculation. See also *reporting subgroups.*

design effects. The ratio of the variance accounting for the sample design to a conventional variance estimate which assumes a simple random sample.

distractor. An incorrect response choice included in a multiple-choice exercise.

District Supervisor. One of 16 supervisors responsible for contacting schools, arranging and conducting introductory meetings, recruiting, training and providing support to Exercise Administrators, distributing and collecting questionnaires, completing administrative reporting forms, and packing and shipping all materials to ETS.

double-length block. A group of assessment exercises, 28 minutes long, created to accommodate the use of longer exercises; used in UBIB spiral administration.

EA. See *Exercise Administrator.*

ECS. See *Education Commission of the States.*

Education Commission of the States. The NAEP grantee prior to Year 15.

Educational Testing Service. The NAEP grantee for Year 15.

entry mode. Processing option under the data entry system: used for the initial transcription of assessment data.

ETS. See *Educational Testing Service.*

examinee. Same as *respondent.*

Excluded Student Questionnaire. An instrument used in the Year 15 assessment; completed for every student who was sampled but was ineligible for or excluded from the assessment.

excluded students. Sample students who were determined by the school to be unable to paticipate because they had limited English-speaking ability, were educable mentally retarded, or functionally disabled: also sample students who were no longer in the school, or were not age- or grade-eligible.

Exercise Administrator. The person whose primary function was to administer the assessment booklets to the sample students.

exercise. A task designed to measure an objective. Because NAEP does not administer "tests," but instead describes educational achievement over time, the term "exercise" is often used instead of the term "item" or "test item." The terms "item" and "exercise" are used synonymously in this report.

exercise booklet. See *booklet.*

exercise part. Each portion of an exercise that asks a separate question. Parts may all pertain to one stimulus, such as a graph or a table, or may concern the same topic.

exercise pool. The entire set of exercises prepared for a learning area. This set includes recycled exercises developed for previous assessments but not used due to exercise booklet or budgetary constraints and newly developed exercises.

expected value. The average of the sample estimates given by an estimator over all possible samples. If the estimator is unbiased, then its expected value will equal the population value being estimated.

extra subsampling. Subsampling of segments which results in less than one Secondary Sampling Unit being surveyed. Used in segments with a large amount of recent growth in population, such as a newly constructed apartment house or trailer park.

field test. A pretest of exercises to obtain information regarding clarity, difficulty levels, timing, feasibility and special administrative problems needed for revision and selection of exercises to be used in the assessment.

final allocation. Usually determined by rounding or adjusting a preliminary sample allocation to integer numbers. See *allocation.*

first stage sampling unit. See *multi-stage sample design.*

foils. The correct and incorrect response choices included in a multiple-choice exercise.

fourth-stage sampling unit. See *multi-stage sample design.*

free-response item. Same as *open-ended response item.*

grade-eligible. An individual who meets the grade definition for one of the Year 15 National Assessment populations: Grade 4, Grade 8, or Grade 11.

grade/age-eligible. An individual who meets the age or grade definition for one of the Year 15 National Assessment populations: Grade 4 or Age 9, Grade 8 or Age 13, Grade 11 or Age 17.

group administered package. A package containing exercises which can be administered to groups of students.

group effect. The difference between the mean for a group and the mean for the nation.

holistic scoring. A method of scoring open-ended response exercises that evaluates a response on the basis of overall impression.

imputation. Prediction of a missing value according to some procedure, using a mathematical model in combination with available information. See *plausible values.*

imputed race/ethnicity. The race/ethnicity of an assessed student, as derived from his or her responses to three particular common background items. A Year 15 *reporting subgroup.*

in-school sample design. Sample design for the National Assessment school survey. See *sample design.*

individual completion rate. Proportion of eligibles in the sample who respond by completing one or more assessment packages.

ineligible. Person who is not eligible for National Assessment because he or she does not satisfy grade or age requirements (see *grade/age-eligible*). Also includes grade/age eligibles who are either mentally or physically handicapped so that they cannot respond to the exercises administered, non-English-speaking, incarcerated, or non-readers.

informative writing. A writing objective of the Year 15 assessment: writing that is used to share knowledge and convey messages, instructions and ideas.

intelligent data entry system. A set of computer programs and procedures developed in accordance with the NAEP design to validate, verify, transcribe and check for the reasonableness of available data.

IRT. See *item response theory.*

item. See *exercise.*

item block. See *block.*

item booklet. See *booklet.*

item part. See *exercise part.*

item pool. See *exercise pool.*

item response theory. Test analysis procedures that assume a maethematical model for the probability that given examinee will respond correctly to a given exercise.

jackknife. A procedure to estimate standard errors of percentages and other statistics. Particularly suited to complex sample designs.

learning area. One of the areas assessed by National Assessment, e.g., art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing.

literary writing. In the Year 15 assessment, writing from a basis of experience and imaginative ideas to share experiences and understand the world.

LOGIST. A computer program for estimating item parameters by joint estimation procedures.

machine-readable catalog. Year 15 computer processing control information, IRT parameters, foil codes and labels in a computer-readable format.

major strata. Used to stratify the primary sampling frame within each region. Involves stratification by size of community and degree of ruralness (SDCC).

marginal value. A row or column total, the sum of all cell values in the row or column.

meanparts estimator. Estimates a subgroup average score across a set of items by the average of the subgroup scores for each of the items. Can be extended to any linear estimator.

mechanics scoring. A method of scoring open-ended response exercises that evaluates elements of sentence construction, word choice, spelling, punctuation and capitalization.

modal age. The age of the majority of a group of grade-eligible students: Age 9 for fourth graders, Age 13 for eighth graders and Age 17 for eleventh graders.

modal grade. The grade attended by the majority of a group of age-eligible students: the fourth grade for 9-year-olds, the eighth grade for 13-year-olds and the eleventh grade for 17-year-olds.

mode of administration. The method by which students are administered assessment instruments; in Year 15 the modes of administration were spiralled and taped.

multi-stage sample design. Indicates more than one stage of sampling. An example of four-stage sampling: 1) sample of counties (primary sampling units or PSUs); 2) sample of blocks within each sample county; 3) sample of housing units within each sample block; 4) sample of grade/age-eligibles within each sample housing unit.

multiple matrix sampling. Sampling plan in which different samples of respondents take different samples of items.

multiple-county PSU. A primary sampling unit (PSU) composed of two or more counties.

NIE. National Institute of Education.

nine-year-olds. One of the National Assessment target populations. For Year 15, defined as persons born during calendar year 1974.

non-cognitive assessment. The background questions used to collect information from students about activities, attitudes and demographics.

nonresponse. The failure to obtain responses or measurements for all sample elements.

nonsampling error. A general term applying to all sources of error except sampling error. Includes errors from defects in the sampling frame, response or measurement error, and mistakes in processing the data.

objective. A desirable education goal agreed upon by scholars in the field, educators and concerned lay persons, and established through the consensus approach.

objectives re-development. A review of the learning area objectives following the initial assessment of a learning area; carried out by scholars in the field, educators and concerned lay persons. May result in revision, modification or total rewriting of the learning-area objectives to reflect current curricular goals and emphases.

observational unit. The individual units for which characteristics are observed or measurements are obtained.

observed race/ethnicity. Race/ethnicity of an assessed as perceived by the Exercise Administrator.

OERI. Office for Educational Research and Improvement.

OMB. Office of Management and Budget.

open-ended response item. A non-multiple-choice exercise that requires some type of written or oral response.

oversampling. Deliberately sampling a portion of the population at a higher rate than the remainder of the population.

paced tape. A tape recording accompanying each tape administration package to assure uniformity in administration. Instructions are played back from the tape recording to prevent reading difficulties from interfering with an individual's ability to respond. Includes response time.

parental education. The level of education of the mother and father of an assessed student as derived from the student's response to two assessment items. A Year 15 *reporting subgroup.*

participant. See *respondent.*

percent-correct. The estimated proportion of a target population who would answer a particular exercise correctly.

persuasive writing. A writing objective of the Year 15 assessment. Writing that attempts to breing about some action or change.

plausible values. Proficiency values drawn at random from a conditional distribution of a NAEP respondent given his or her response to cognitive exercises and a specified subset of background variables (conditioning variables). The selection of a plausible value is a form of *imputation.*

population. An aggregate of elements, usually individual units with associated characteristics for observation or measurement.

post-stratification. Classification of selected sampling units by a set of strata definitions after the sample has been selected.

PPS. Probability Proportional to Size.

precision. The difference between the expected value and the sample estimate of a population value, as measured by the sampling error.

Primary Sampling Unit. A primary sampling unit. This is the basic geographic sampling unit for National Assessment. A PSU is either a single county or a set of contiguous counties. See also *multi-stage sample design.*

primary trait scoring. A method of scoring open-ended response exercises by evaluating the ability to write for precisely defined purposes. Criteria for evaluating responses are associated with specific point scores in a scoring guide.

Principal Questionnaire. A data collection form given to school principals. The principals respond to questions concerning enrollments, size of the community, occupational composition of the community, etc.

Probability Proportional to Estimated Size (PPES). Selection method where probabilities of selection for sampling units are assigned in proportion to the magnitude of the estimated size measure for each unit.

Probability Sample. A sample in which every element of the population has a known, non-zero probability of being selected.

proportional allocation. Allocation of a sample to strata in proportion to observational units in each stratum.

pseudo-replicate. The value of a statistic based on an altered sample. Used by the jackknife variance estimator.

PSU. See *primary sampling unit.*

public-use data tapes. Computer tapes containing respondent-level cognitive item, background and attitude and demographic data. Available for use by researchers wishing to do secondary analyses of NAEP data.

PUDT. See *public-use data tapes.*

QED. Quality Education Data, Inc. A suplier of additional student and school data for Year 15.

random variable. A variable which takes on any value of a specified set with a particular probability.

reading proficiency scale. Scale (0 to 500) based on IRT upon which levels of reading performance can be measured.

receipt control. Procedures used by scoring staff to check in and screen field materials. Information from these procedures is relayed to assessment administrative staff so that any errors may be corrected.

recycled exercises. The set of exercises that is kept secure from one assessment to the next that will be used to measure changes (growth, stability or decline) in performance for the learning area.

region. One of four geographical regions used in gathering and reporting data: Northeast, Southeast, Central and West (as defined by the Office of Business Economics, U. S. Department of Commerce). A Year 15 *reporting subgroup.*

released item. An item for which results and item text have been reported to the public.

reliability check. The scoring of open-ended response items by a second scorer. In Year 15, twenty percent of these items underwent reliability checks.

reporting subgroups. Groups within the national population for which National Assessment data are reported: sex, race/ethnicity, grade, age, level of parental education, region, and size and type of community.

rescore. If an open-ended exercise was scored under different conditions than presently held or if passage of time may affect scoring, responses from an earlier assessment may be rescored at the same time as responses from a later assessment. Responses from an earlier assessment also may be held and not scored so that they can be scored with responses from a later assessment.

Research Triangle Institute. The NAEP survey subcontractor prior to the Year 15 assessment; drew the sample of PSUs and schools for the Year 15 assessment.

resolution mode. Processing option under the data entry system; used for the correction of erroneous or discrepant data values.

respondent. A person who is eligible for National Assessment, is in the sample, and who responds by completing one or more items in an assessment booklet.

response error. The difference between the observed value and the true value for an observational unit.

response experience. Response rates observed in previous surveys which are used for planning purposes.

response options. Different alternatives to a multiple-choice question that can be selected by the respondent.

response rate. Proportion of sampling units for which responses or measurements are obtained.

review conference. A conference held to review the objectives of a learning area to assure their acceptance as measures of the objectives by scholars, educators and lay persons or to review exercises for racial, ethnic, social or regional bias.

RP scale. See *reading proficiency scale*

RTI. See *Research Triangle Institute.*

sample design parameter. A population parameter or a survey parameter, such as an expected response rate, used in designing a sample.

sample design. Specifications for selecting a sample plus specifications for processing the sample data to make estimates. See *sampling plan.*

sample size. The number of units in the sample. (See also *average sample size.*)

sample survey. As opposed to a census, a data collection process whereby only a sample of the population is observed or measured.

sample. A portion of a population, or a subset from a set of units, selected by some probability mechanism for the purpose of investigating the properties of the population. NAEP does not assess an entire grade/age population but rather selects a representative sample from the grade/age group to answer assessment items.

sampling error. The error that occurs because only a sample of the population is observed. Measured by *standard error and variance.*

sampling frame. The list of sampling units from which the sample is selected.

sampling plan. Set of specifications and procedures used to select a sample. See *sample design.*

School Characteristics and Policy Questionnaire. A five-page questionnaire completed for each school by the principal or other official: used to gather information concerning school administration, staffing patterns, English curriculum and student services.

school district. Administrative unit of the public school system, usually involving a school system under a single district organization.

school response rate. The response rate for a sample of schools. (See *response rate.*)

scoring guide. A guide for hand scoring an open-ended response item that specifies descriptive or diagnostic categories by giving definitions and example responses.

second-stage sampling unit. See *multi-stage sample design.*

Secondary Sampling Unit (SSU). See *multi-stage sample design.*

secondary traits. Characteristics of a response to an open-ended exercise indicating the presence or absence of elements that are of special significance to the exercise.

secure items. Items not release for public use, in order to be readministered in subsequent assessments to determine whether performance levels have increased, decreased or remained the same.

selection probability. The probability, or chance, that a particular sampling unit has of being selected in the sample.

SES. See *socioeconomic status.*

session. See *assessment session.*

seventeen-year-old. One of the National Assessment target populations. For Year 15, defined as persons born from October 1, 1966 to September 30, 1967.

sex. One of the NAEP reporting subgroups. Assessment results are reported for males and females.

simple random sample. Process for selecting n sampling units from a population of N sampling units so that each sampling unit has an equal chance of being in the sample and every combination of n sampling units has the same chance of being in the sample chosen.

single-length block. A group of assessment items, 14 minutes long, containing an average of 12 minutes of reading and writing exercises and two minutes of background and attitude questions.

Size and Type of Community (STOC). One of the NAEP *reporting subgroups*, dividing the communities in the nation into seven groups based on size and other characteristics.

size measure. Value of a variable used to determine the allocation of the sample to strata or used to assign selection probabilities to sampling units within a stratum.

size stratum. A stratum based upon the value of the size measures for units placed in the same stratum; e.g., a stratum for the largest units.

SMSA. See *standard metropolitan statistical area.*

Socioeconomic Status (SES). For sampling, the lower SES portion of the population (approximately 20 percent) is considered a subpopulation to be sampled.

SSU size measure. Measure of size for a secondary sampling unit (SSU).

standard error. A measure of sampling variability for a statistic. Because of NAEP's complex sample design, standard errors are estimated by jackknifing first-stage sample estimates.

Standard Metropolitan Statistical Area (SMSA). An area defined by the federal government for the purposes of presenting general-purpose statistics for metropolitan areas. Typically, an SMSA contains a city of at least 50,000 population plus adjacent areas.

stem. The portion of an item that states the problem or asks the question.

stimulus. For reading items, a visual stimulus used as part of the stem.

STOC. See *size and type of community.*

stratification. The division of a population into parts, called strata.

stratified sample. A sample selected from a population which has been stratified with part of the sample coming from each stratum. The strata may be either subdivisions of the population for which separate estimates are desired or subdivisions defined for the purpose of reducing sampling error.

student frame. List of grade/age-eligible students within a sample school.

student ID number. A unique identification number assigned to each respondent to preserve his or her anonymity. NAEP does not record the names of any respondents.

student response rate. The response rate for a sample of students. See *response rate.*

study skill item. An item requiring a special learned skill beyond the facility of recognizing and understanding the printed word; for example, the interpretation of a bar graph, telephone bill or table of contents.

subgroup. See *reporting subgroup.*

subject areas. See *learning areas.*

subpopulation. See *reporting subgroup.*

subsampling. Selection of a sample from a larger sample. Also used to describe multi-stage sampling.

subsegmenting. Operation of subdividing the area of a segment into several subareas and selecting one of the subareas.

survey design. All specifications and procedures involved in a survey.

survey population. The population actually surveyed or represented by the sample. May differ from the target population.

systematic sample (systematic random sample). A sample selected by a systematic method; for example, when units are selected from a list at equally spaced intervals.

TAC. See *Technical Advisory Committee.*

tapescript. A script prepared for the announcer to use in producing the paced tape, indicating exactly what is to be read or not read aloud to the students as well as the amount of response time allowed for each exercise. See *paced tape.*

target population. Same as *population.*

Teacher Questionnaire. A nine-page questionnaire completed by selected English and Language Arts teachers; used to gather information concerning year of teaching experience, frequency of writing assignments, teaching materials used, and the availability and use of computers.

Technical Advisory Committee. Committee of experts in areas of educational policy and procedures, mathematics, and measurement theory; provides advice and recommendations concerning NAEP staff technical plans such as sampling, program implementation and analyses.

theta scale. A rescaling of the Reading Proficiency scale that standardizes the combined age and grade samples. Item response theory calculations are carried out in the theta scale for mathematical convenience, then transformed to the Reading Proficiency scale for reporting purposes.

third-stage sampling unit. See *multi-stage sample design.*

thirteen-year-olds. One of the National Assessment target populations. For Year 15, defined as persons born during calendar year 1970.

T-unit. Used to assess the quality of syntax used in an essay; an independent clause and all of its modifying words, phrases and clauses.

UBIB (UnBalanced Incomplete Block) spiralling. Refers to a portion of the spiral design in which each booklet contains a common block of background questions, a single-length block of assessment exercises, and a double-length block of assessment exercises.

unequal probability sampling. A sample selection procedure in which the sampling units have assigned selection probabilities which are not equal for all units.

user tapes. See *public-use data tapes.*

variance. The square of the standard error; the average of the squared deviations of a random variable from the expected value of the variable.

verification mode. Processing option under the data entry system; used for the substantiation of data values.

WARM. See *Weighted Average Response Method.*

weight. A multiplicative factor equal to the reciprocal of the probability of a respondent being selected for assessment with adjustment for nonresponse; an estimate of the number of persons in the population represented by a respondent in the sample. The sum of weights for all respondents at an age level is an estimate of the number of persons in the country at that age level.

Weighted Average Response Method (WARM). A generalization of the Average Response Method allowing the estimation of weighted averages.

Westat, Inc. The NAEP survey subcontractor for the Year 15 assessment.

Winsorizing. Replacement of data values which are more extreme than a given threshold by that threshold value. Bounds the influence of extreme data values on an estimator while maintaining information on the sign of the values.

writing scale. Scale based on *Average Response Method* upon which levels of writing performance can be measured.

Year 01, 02, 03...15. A sequential number assigned to each period of assessment activities in the field. Year 15 pre-assessment activities began in May 1983; assessment activities began in August 1983 and ended in May 1984.